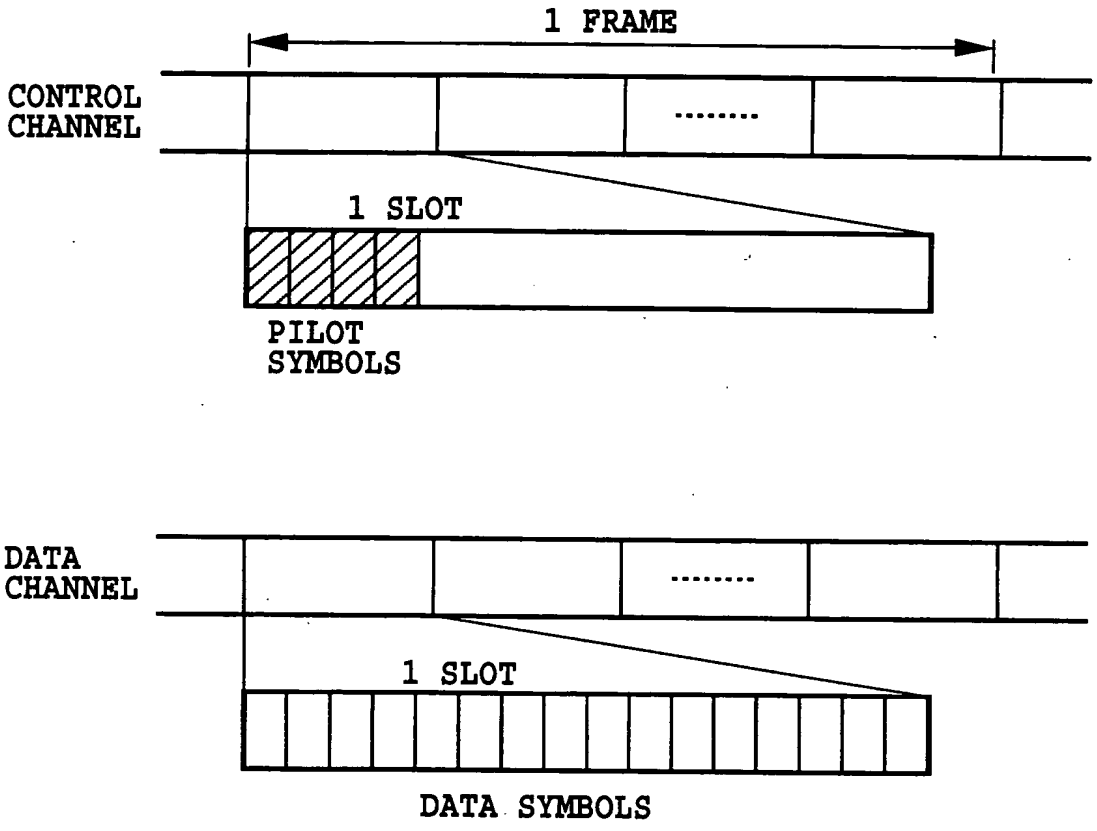

1 FRAME
CONTROL CHANNEL
.....
1 SLOT
PILOT SYMBOLS
DATA CHANNEL
.....
1 SLOT
DATA SYMBOLS

FIG.1

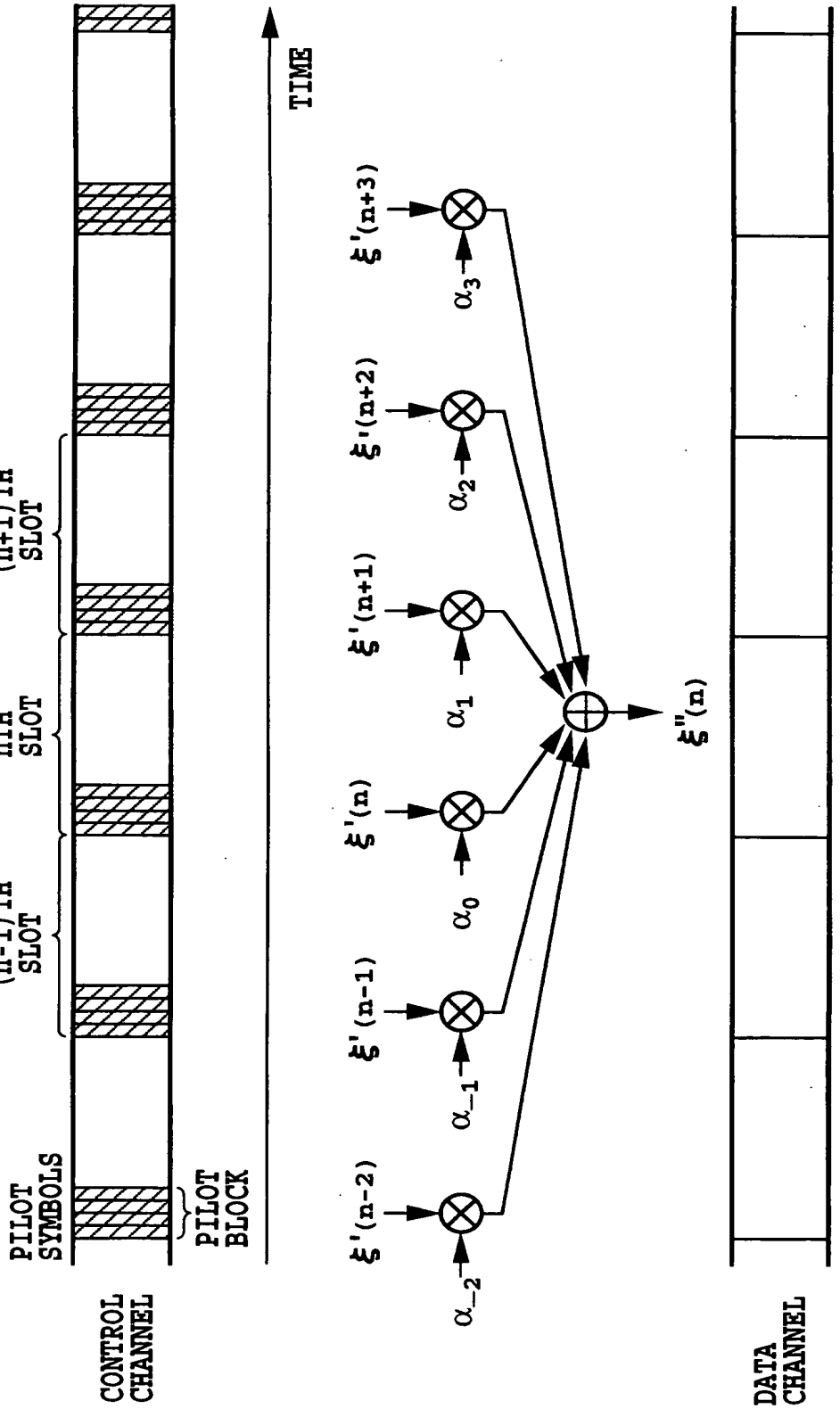

CONTROL CHANNEL
PILOT SYMBOLS
PILOT BLOCK
(n-1)TH SLOT
nTH SLOT
(n+1)TH SLOT
TIME
ξ'(n-2)
ξ'(n-1)
ξ'(n)
ξ'(n+1)
ξ'(n+2)
ξ'(n+3)
α_-2
α_-1
α_0
α_1
α_2
α_3
ξ"(n)
DATA CHANNEL

FIG.2

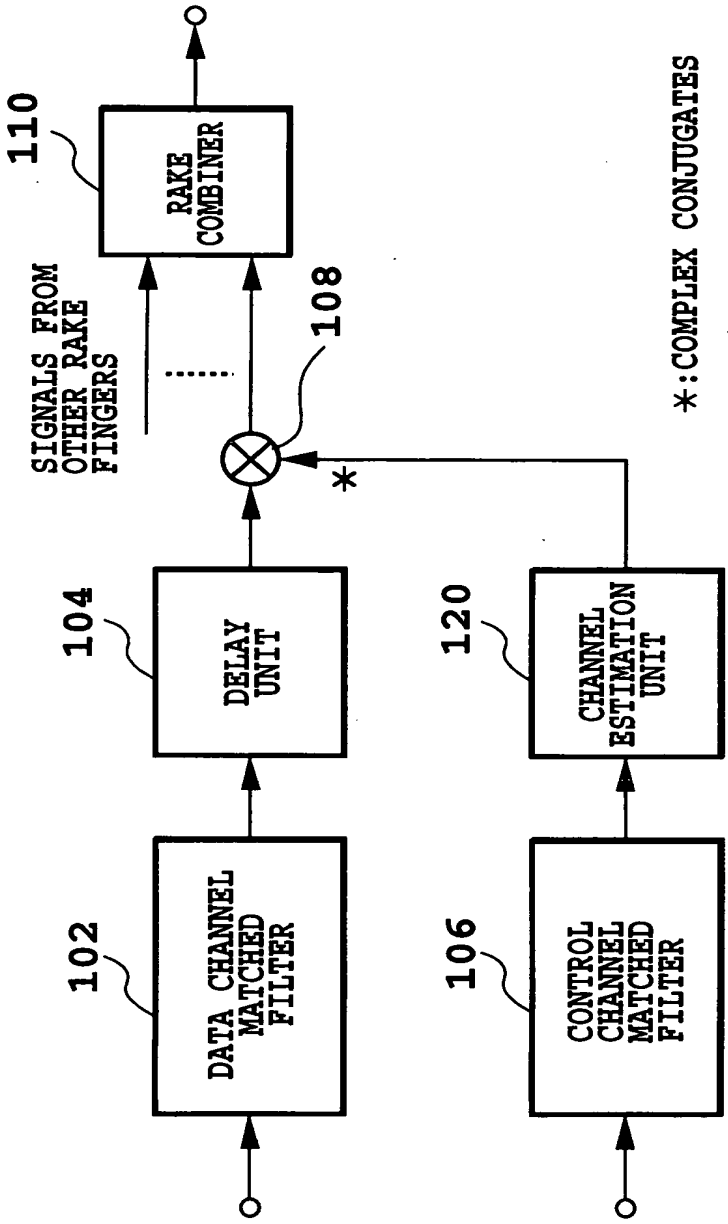

110
RAKE COMBINER
SIGNALS FROM OTHER RAKE FINGERS
108
*
*:COMPLEX CONJUGATES
104
DELAY UNIT
120
CHANNEL ESTIMATION UNIT
102
DATA CHANNEL MATCHED FILTER
106
CONTROL CHANNEL MATCHED FILTER

FIG.3

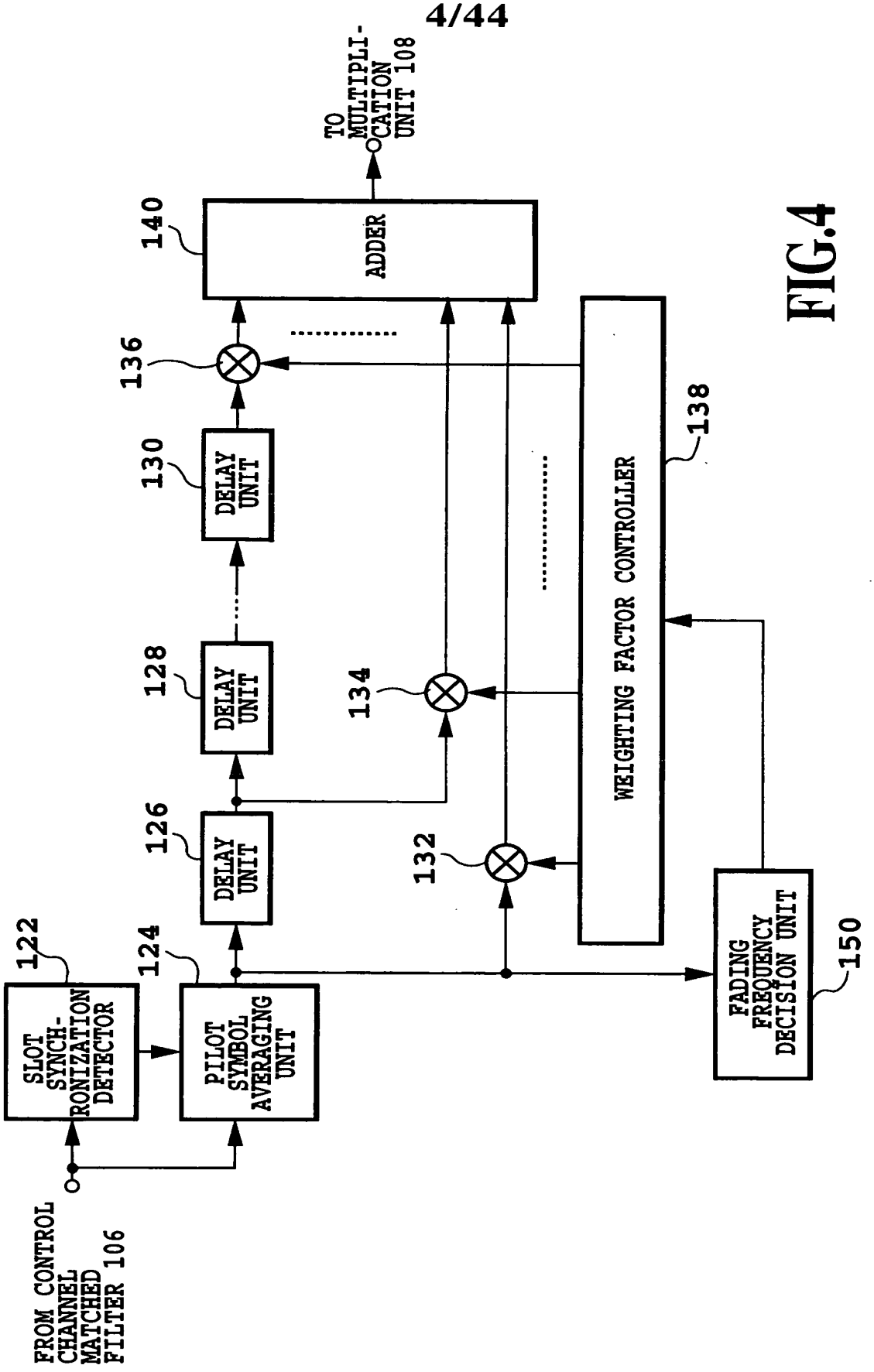

FROM CONTROL CHANNEL MATCHED FILTER 106
SLOT SYNCH-RONIZATION DETECTOR
122
PILOT SYMBOL AVERAGING UNIT
124
DELAY UNIT
126
DELAY UNIT
128
DELAY UNIT
130
132
134
136
WEIGHTING FACTOR CONTROLLER
138
ADDER
140
TO MULTIPLI-CATION UNIT 108
FADING FREQUENCY DECISION UNIT
150

FIG.4

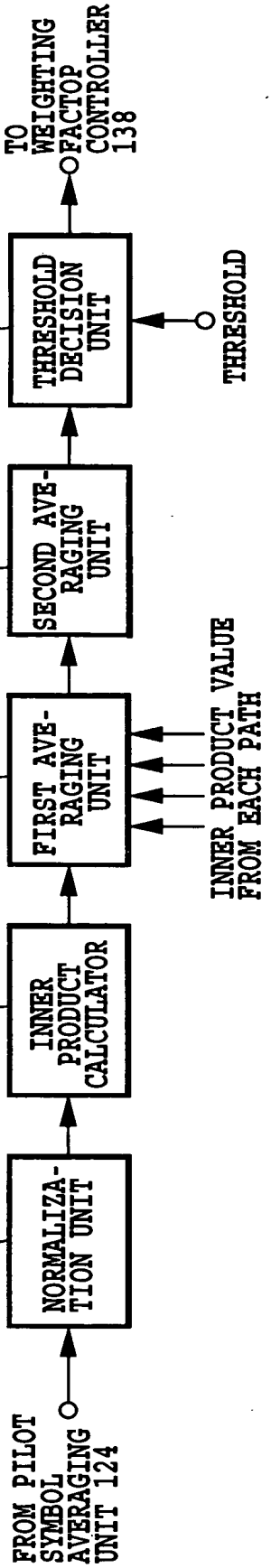


FIG.5

09702705 "0 7 0 2 7 0 5 0 9 0

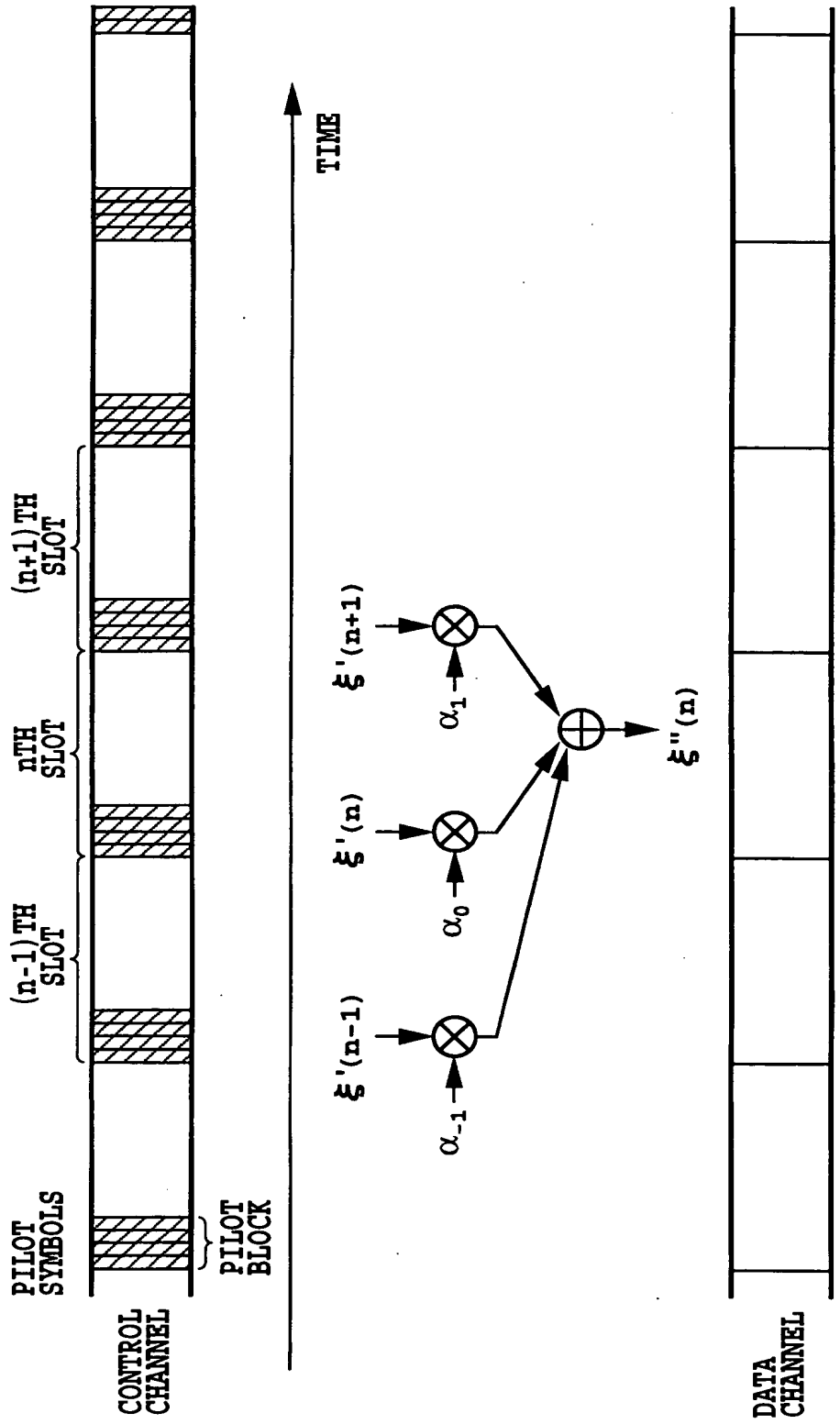


FIG.6

00F027 "50/70450

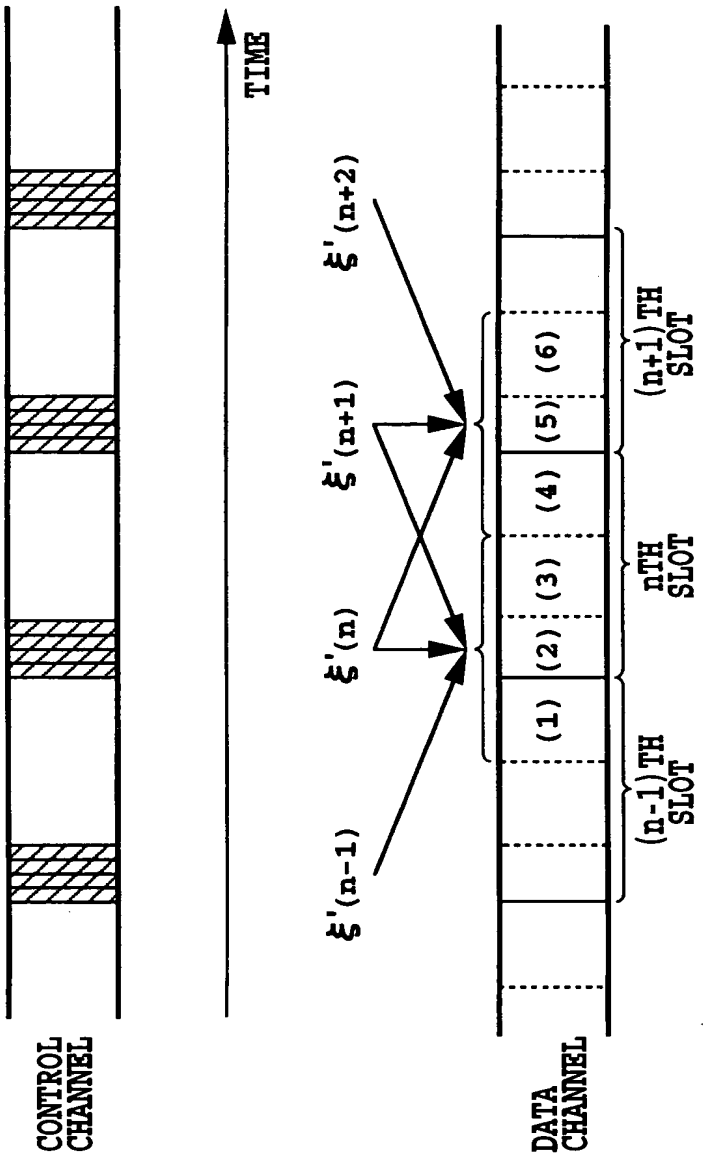

CONTROL CHANNEL
TIME
ξ'(n-1)
ξ'(n)
ξ'(n+1)
ξ'(n+2)
DATA CHANNEL
(1)
(2)
(3)
(4)
(5)
(6)
(n-1)TH SLOT
nTH SLOT
(n+1)TH SLOT

FIG.7

0010027 "50/10/50

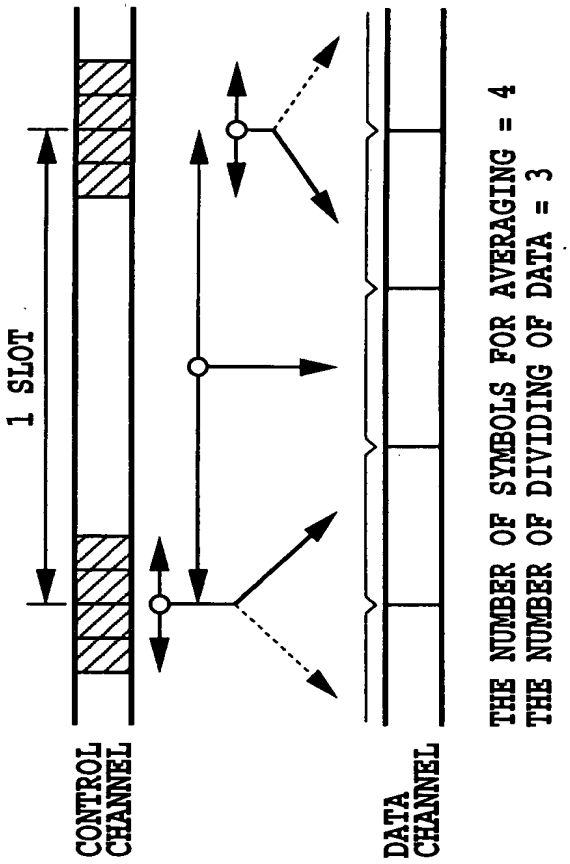


FIG.8

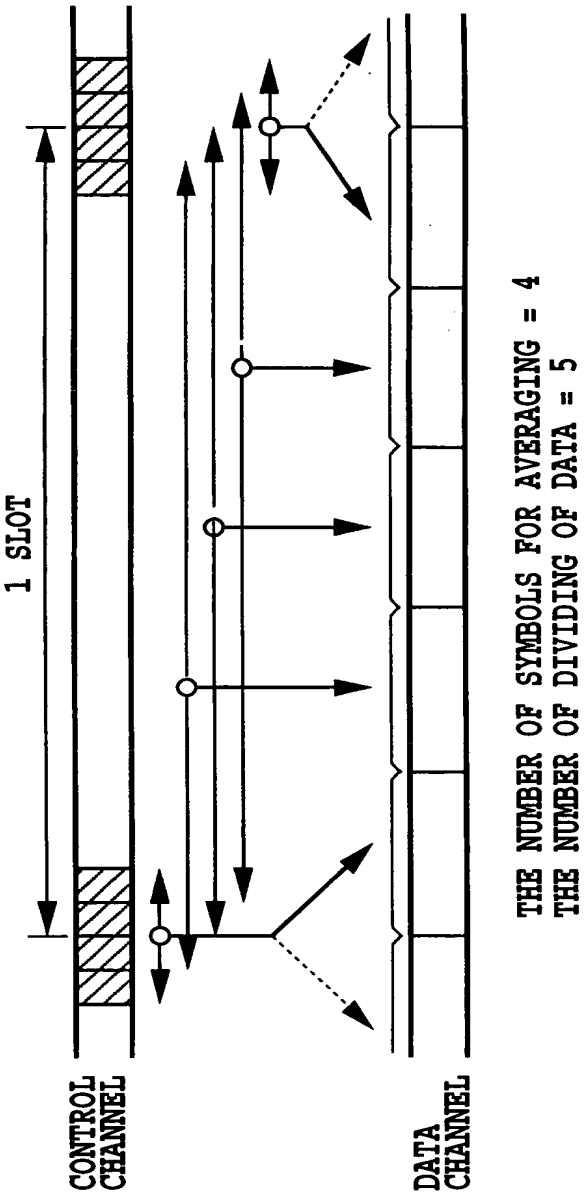


FIG.9

0070"50/70460

DOCKET: 50270/50

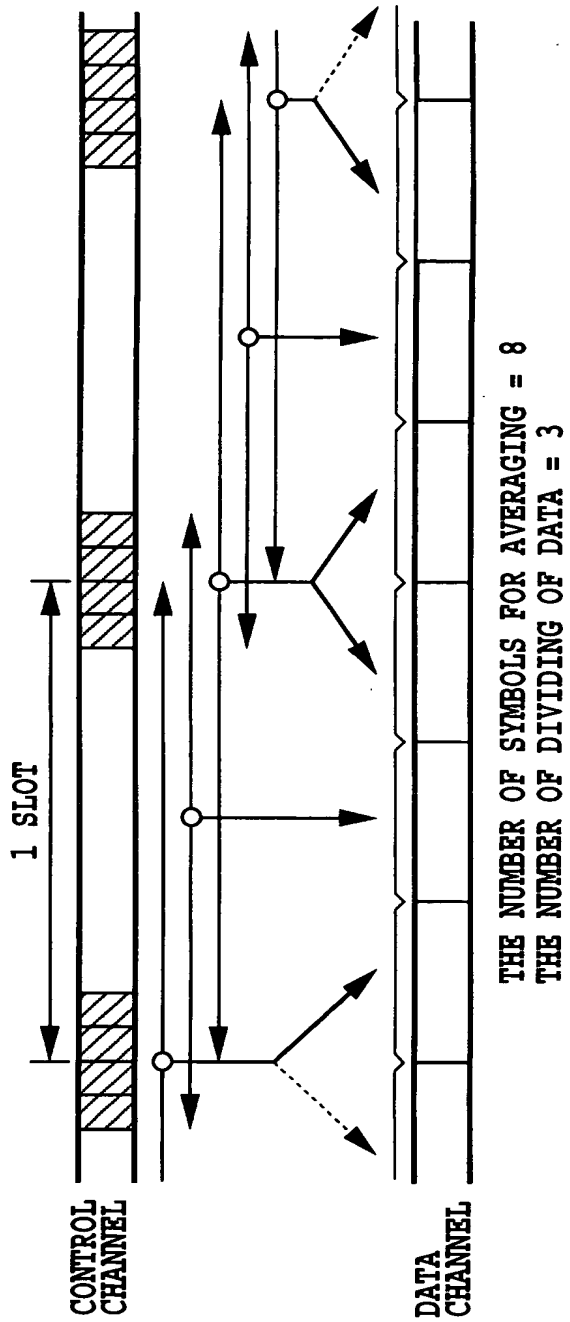


FIG.10

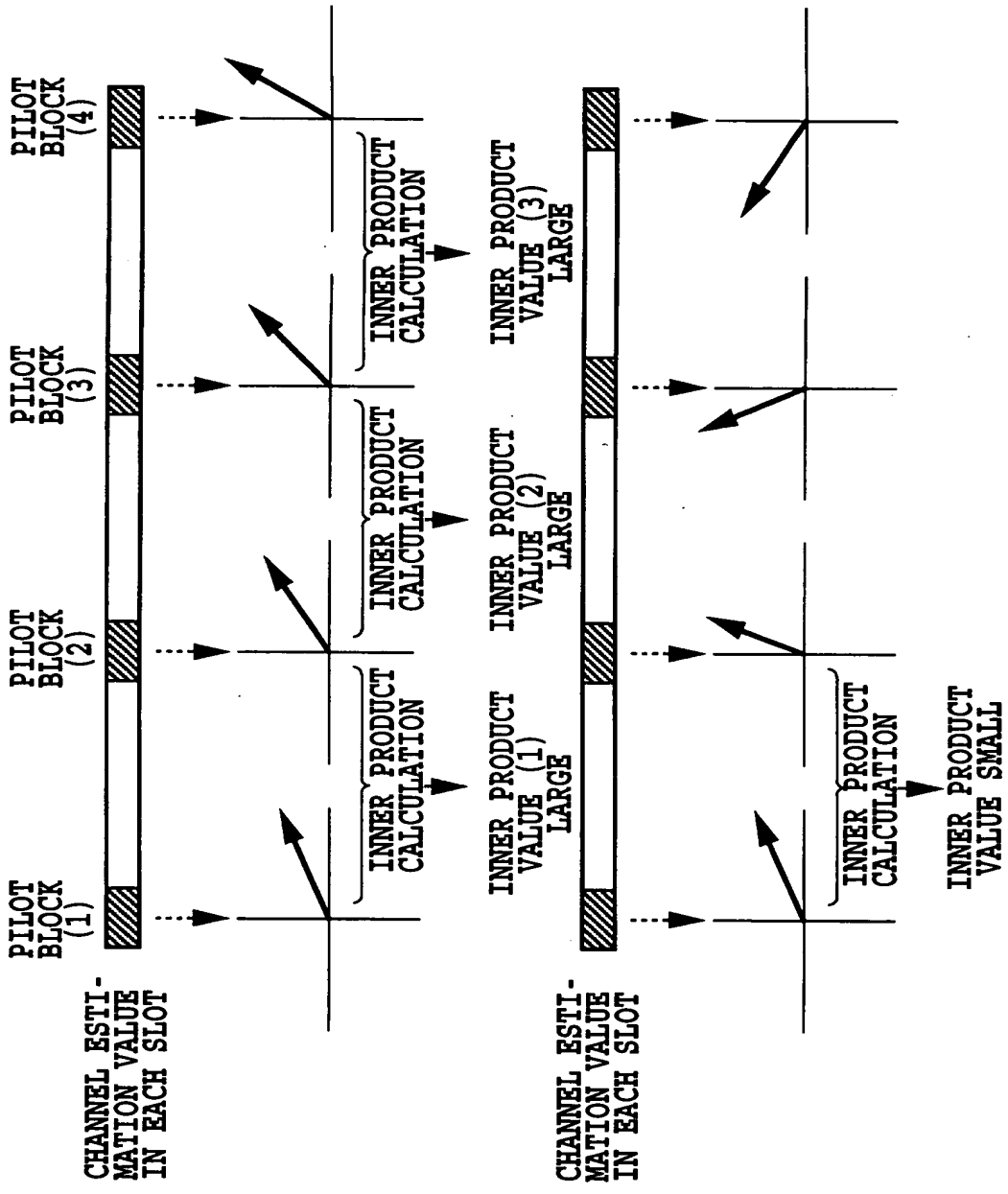
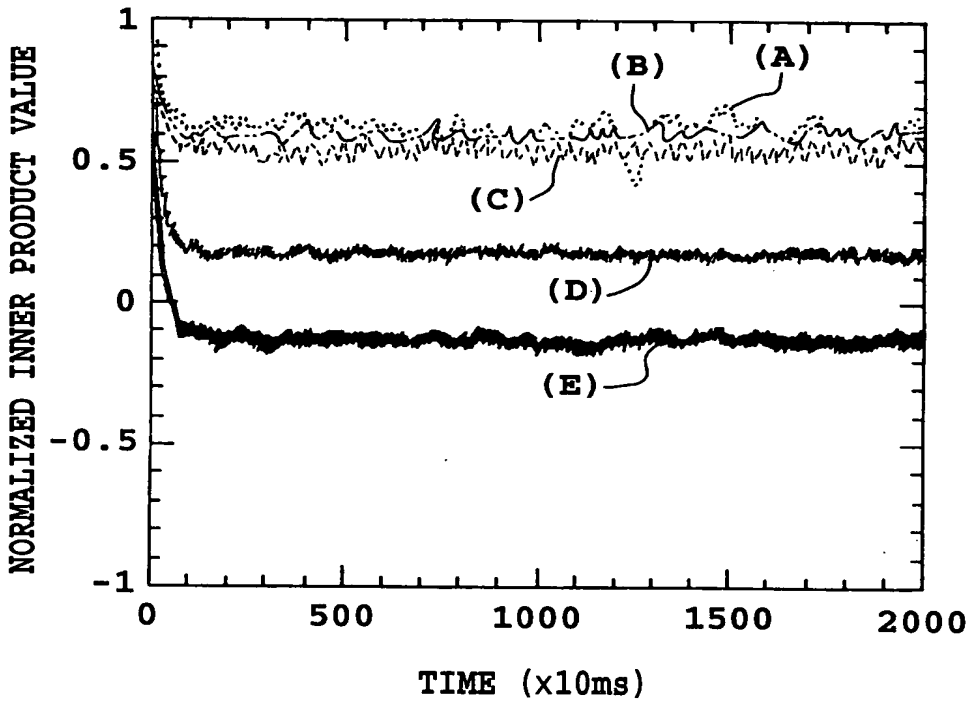


FIG.11A

FIG.11B



(A) ····· fD Tslot=0.001
(B) —·—·— fD Tslot=0.01
(C) ····· fD Tslot=0.1
(D) ——— fD Tslot=0.3
(E) ——— fD Tslot=0.5

FIG.12

DOCKET: SONY-60460

FIG.13

FIG.13A FIG.13B

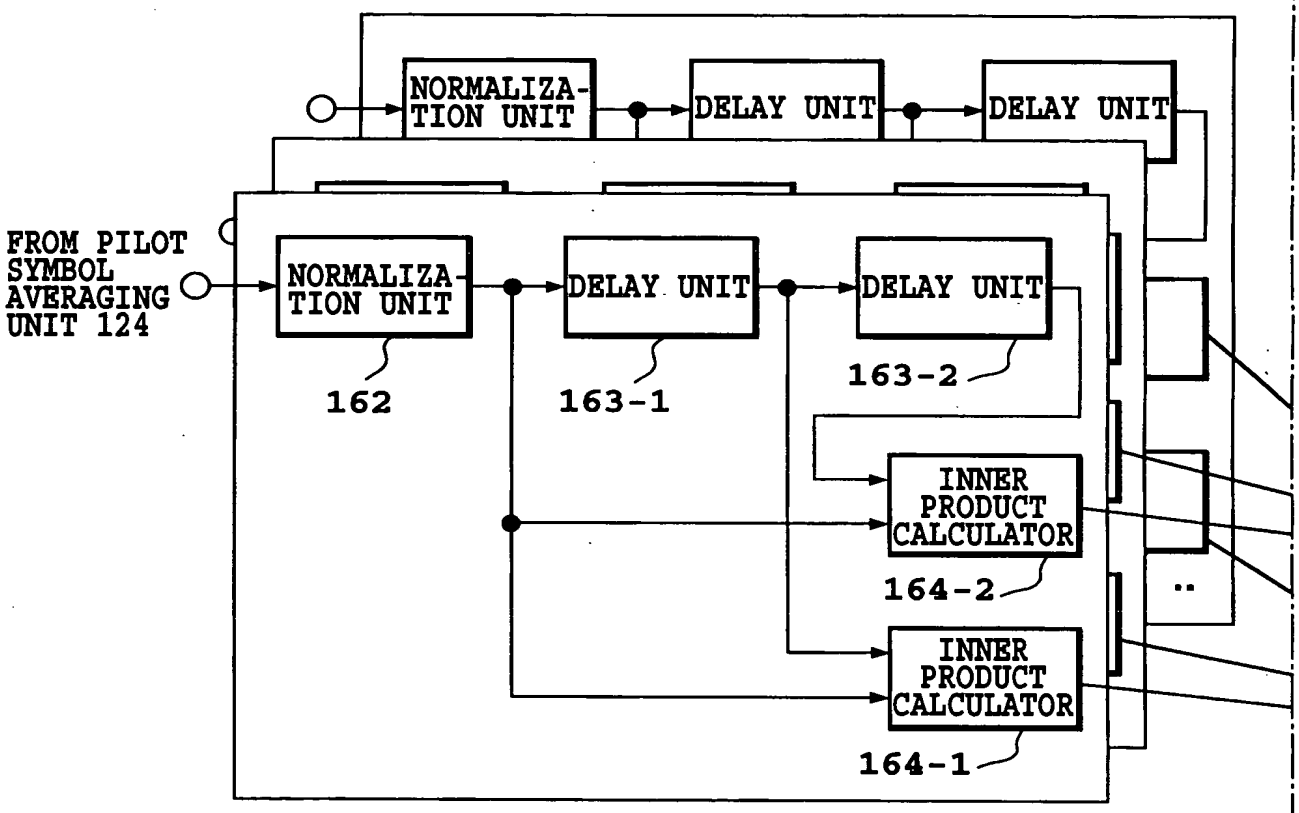


FIG.13A

00702T-050704P0

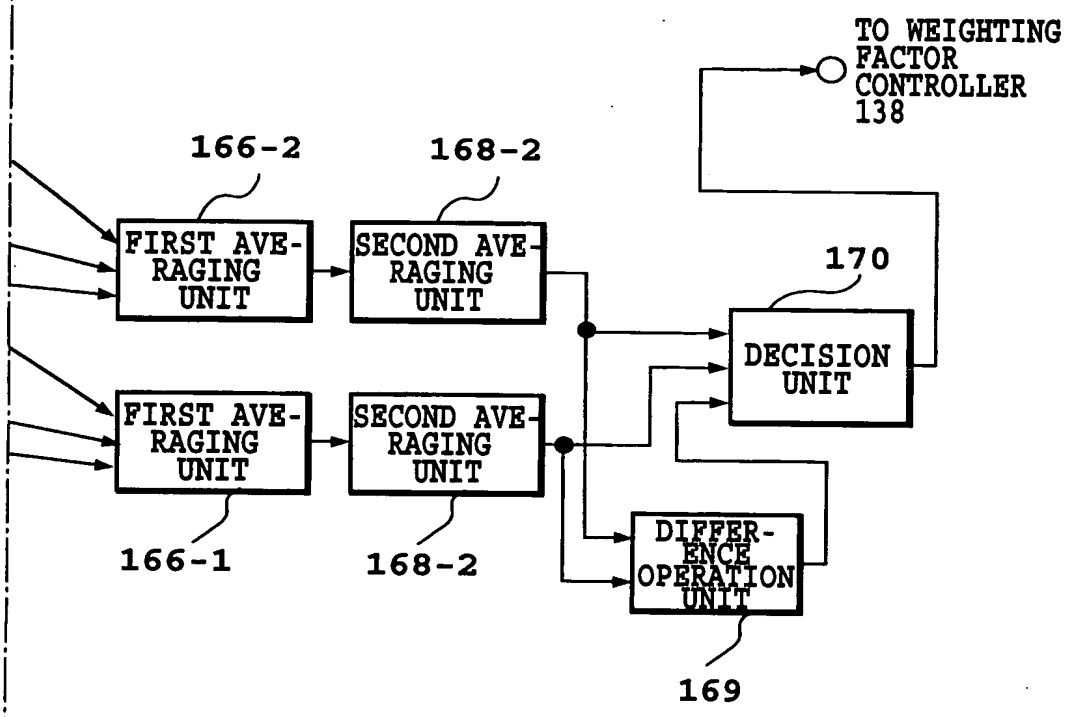


FIG.13B

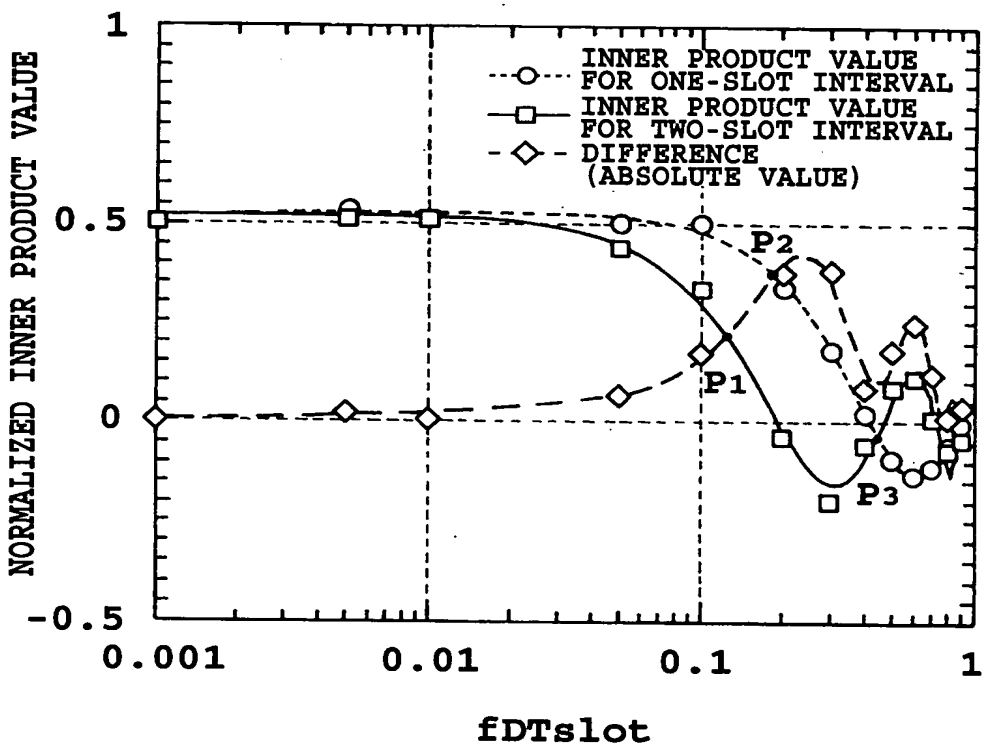

1
0.5
0
-0.5
0.001
0.01
0.1
1
NORMALIZED INNER PRODUCT VALUE
fDTslot
INNER PRODUCT VALUE FOR ONE-SLOT INTERVAL
INNER PRODUCT VALUE FOR TWO-SLOT INTERVAL
DIFFERENCE (ABSOLUTE VALUE)
P1
P2
P3

FIG.14

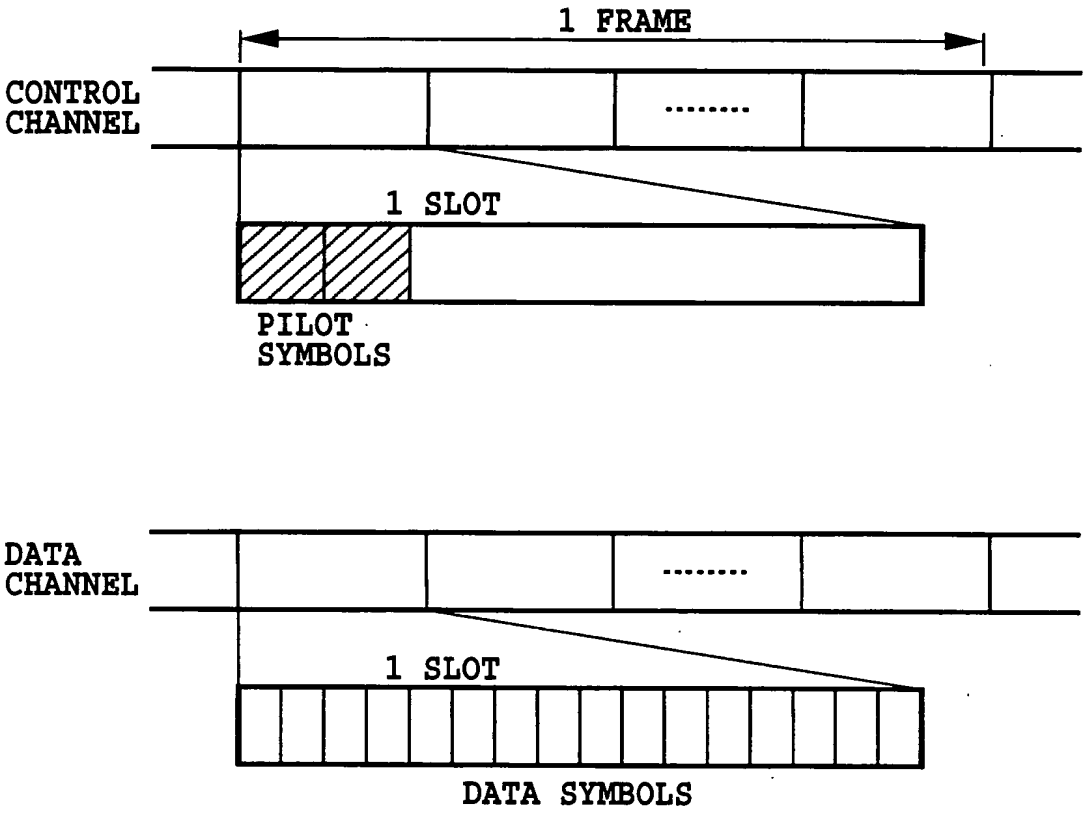

1 FRAME
CONTROL CHANNEL
.....
1 SLOT
PILOT SYMBOLS
DATA CHANNEL
.....
1 SLOT
DATA SYMBOLS

FIG.15

09/701705 - 20040726

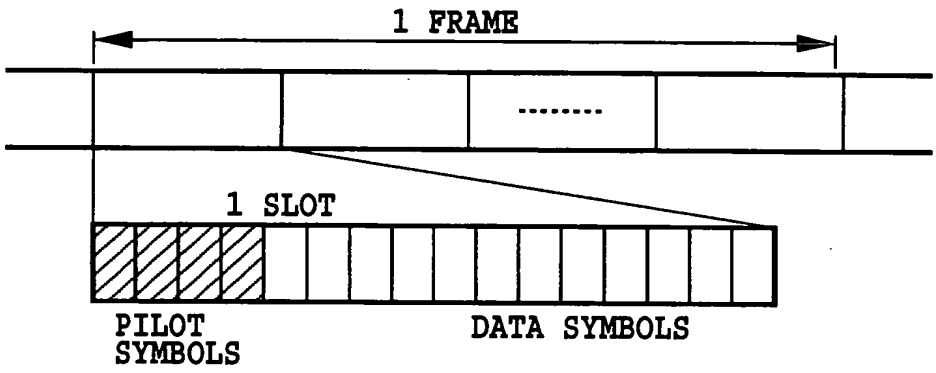


FIG.16

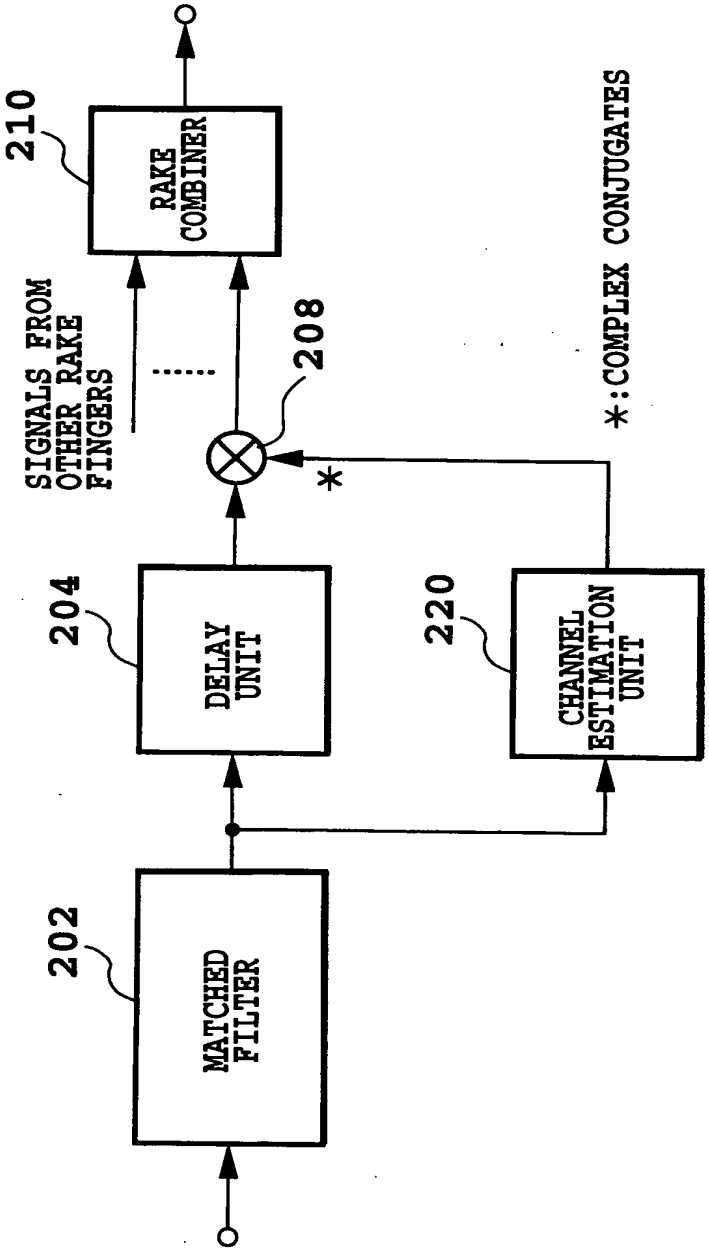

210
RAKE COMBINER
SIGNALS FROM OTHER RAKE FINGERS
208
*:COMPLEX CONJUGATES
204
DELAY UNIT
220
CHANNEL ESTIMATION UNIT
202
MATCHED FILTER

FIG.17

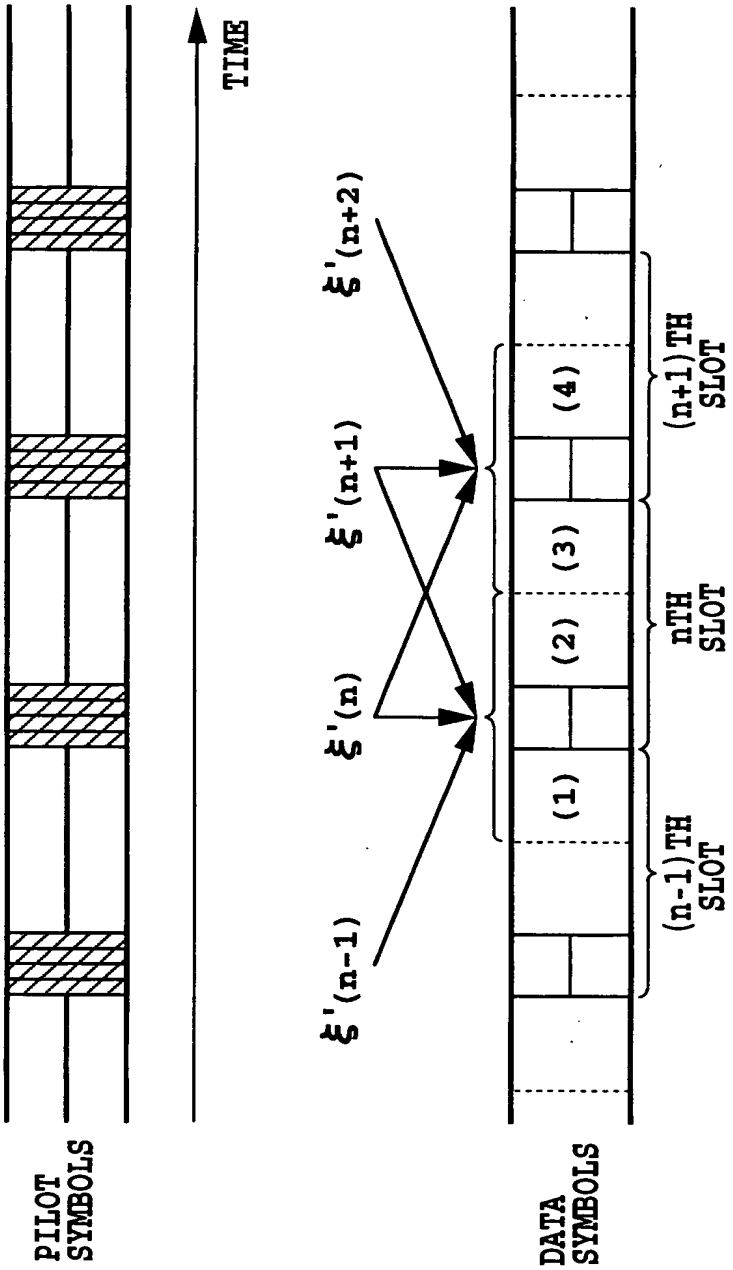

PILOT SYMBOLS
TIME
DATA SYMBOLS
ξ'(n-1)
ξ'(n)
ξ'(n+1)
ξ'(n+2)
(1)
(2)
(3)
(4)
(n-1)TH SLOT
nTH SLOT
(n+1)TH SLOT

FIG.18

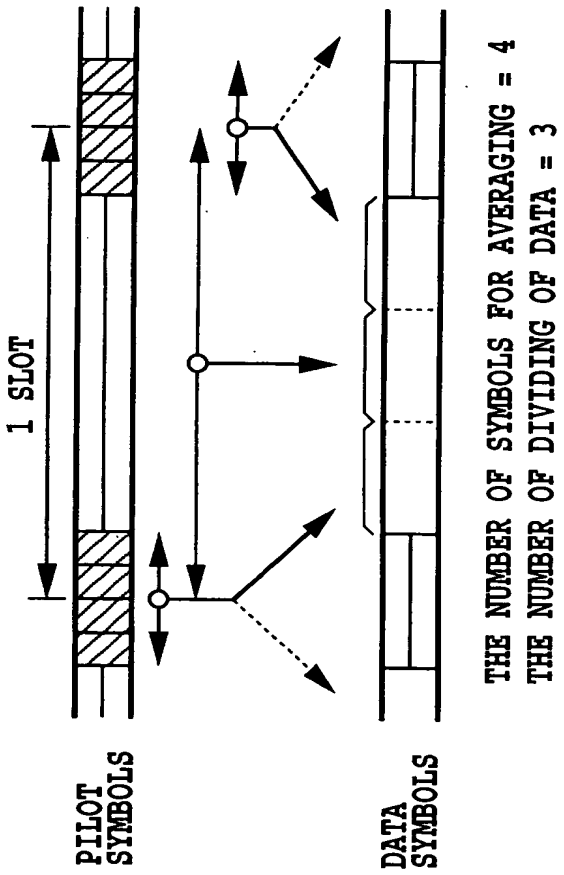

1 SLOT
PILOT SYMBOLS
DATA SYMBOLS
THE NUMBER OF SYMBOLS FOR AVERAGING = 4
THE NUMBER OF DIVIDING OF DATA = 3

FIG.19

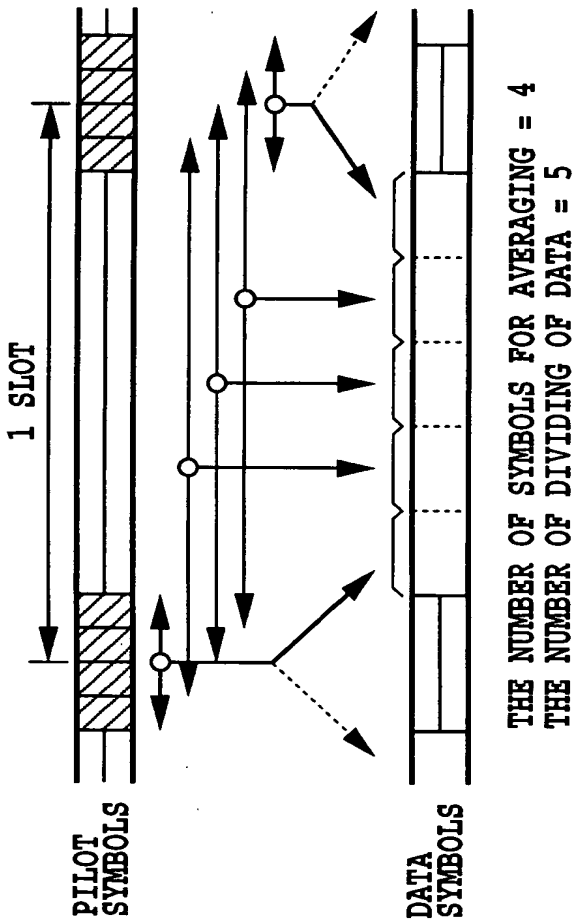


FIG.20

0010270-050450

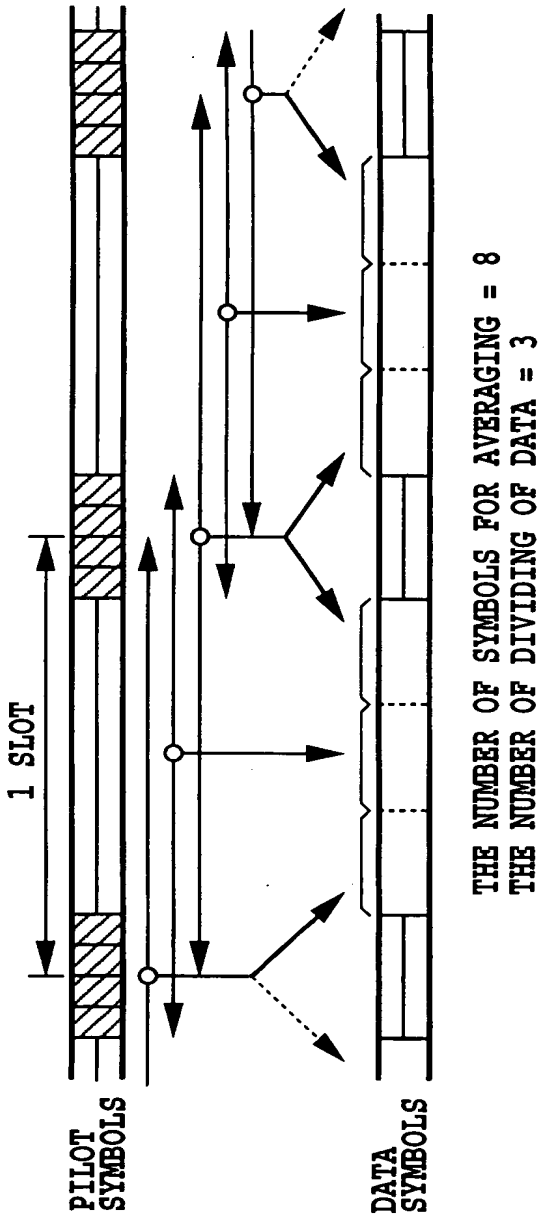

1 SLOT
PILOT SYMBOLS
DATA SYMBOLS
THE NUMBER OF SYMBOLS FOR AVERAGING = 8
THE NUMBER OF DIVIDING OF DATA = 3

FIG.21

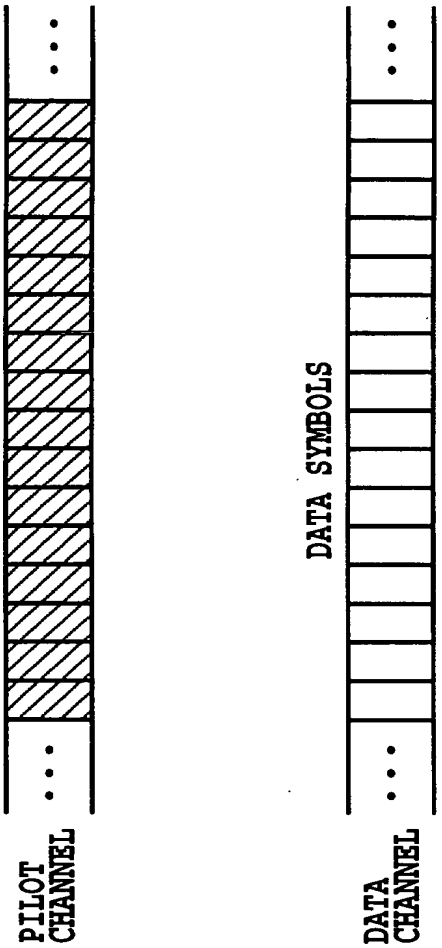


FIG.22

DOCKET: 50/1045

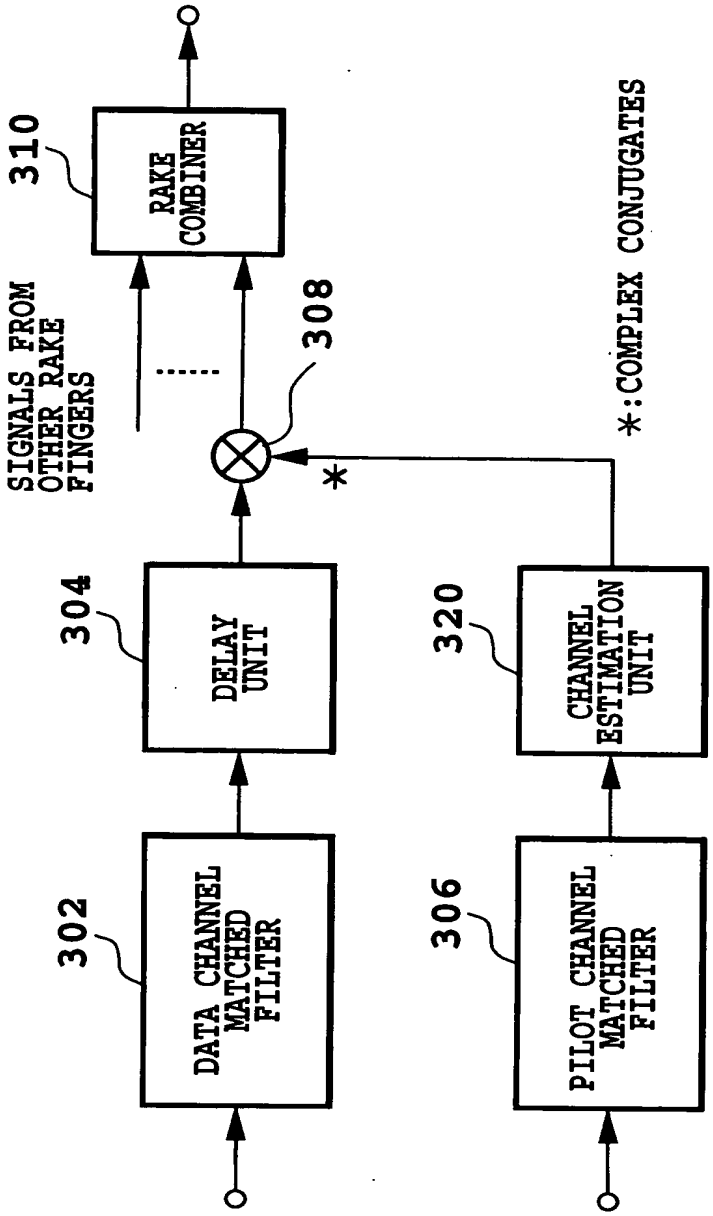

310
RAKE COMBINER
SIGNALS FROM OTHER RAKE FINGERS
308
*:COMPLEX CONJUGATES
304
DELAY UNIT
320
CHANNEL ESTIMATION UNIT
302
DATA CHANNEL MATCHED FILTER
306
PILOT CHANNEL MATCHED FILTER

FIG.23

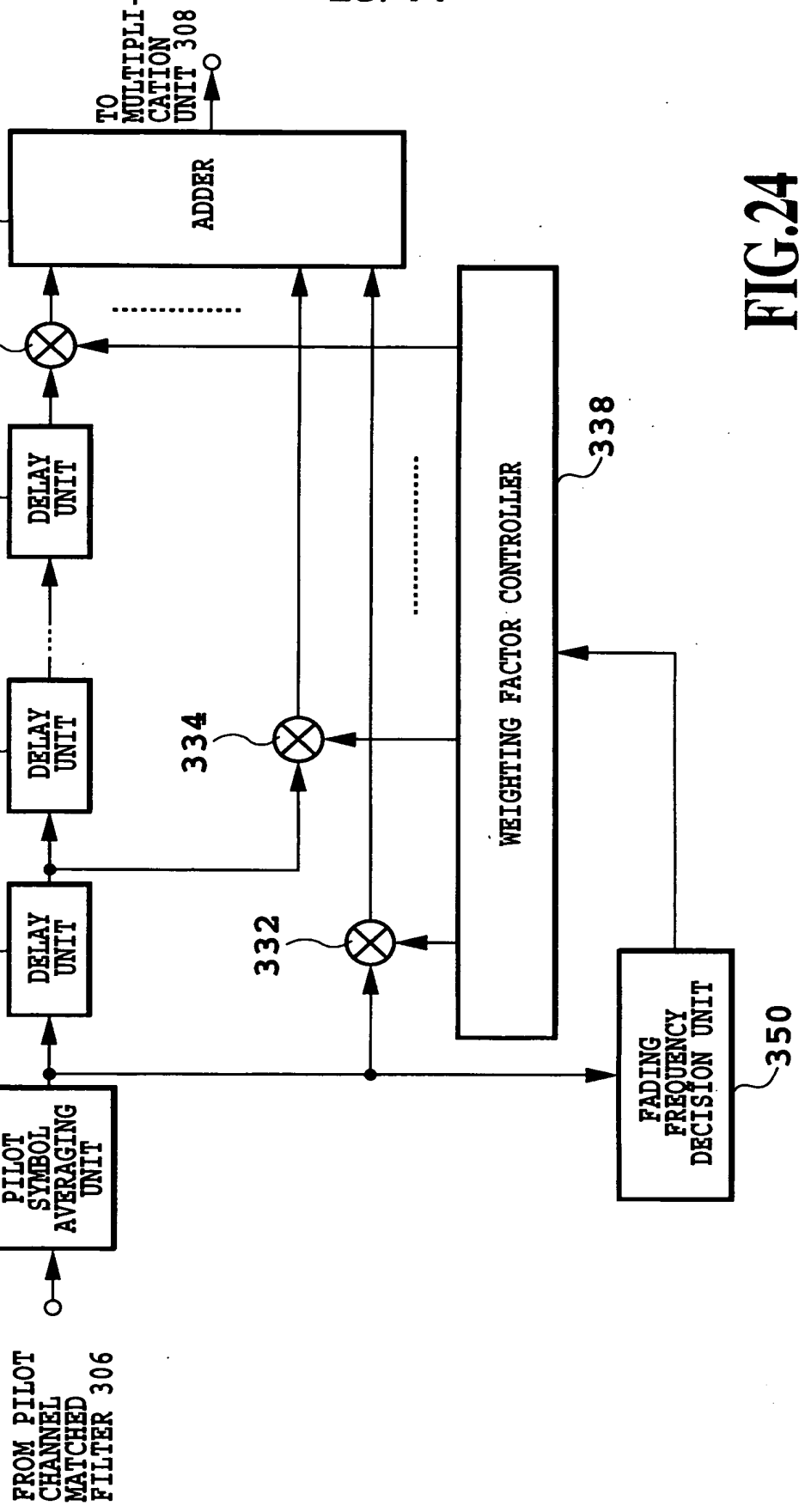


FIG.24

DOCID: <WO 0074260>

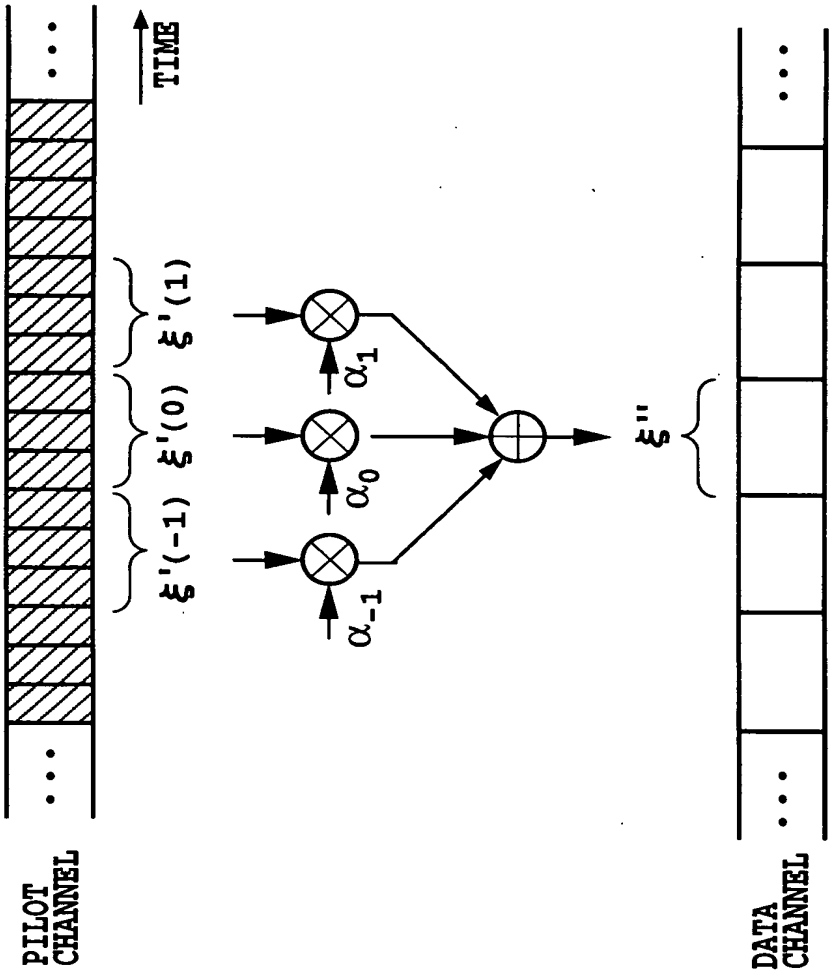


FIG.25

09/701705 "Express Mail" 09/27/2000

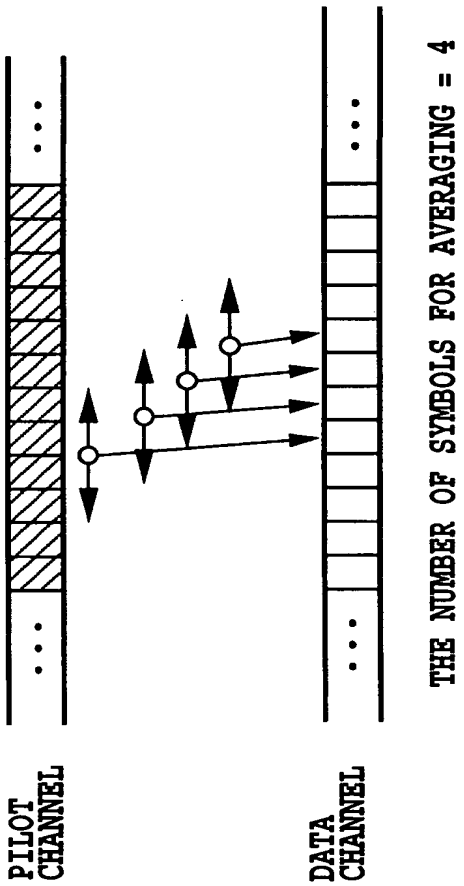

PILOT CHANNEL
DATA CHANNEL
THE NUMBER OF SYMBOLS FOR AVERAGING = 4

FIG.26

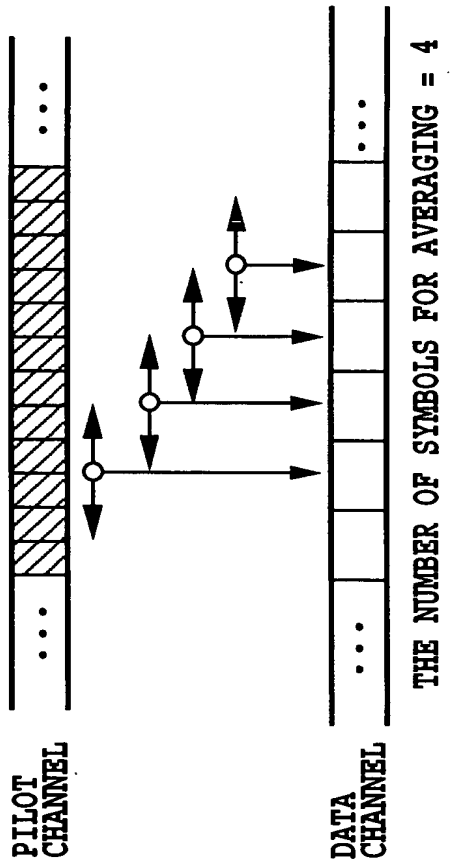


FIG.27

09704705 - 50270460

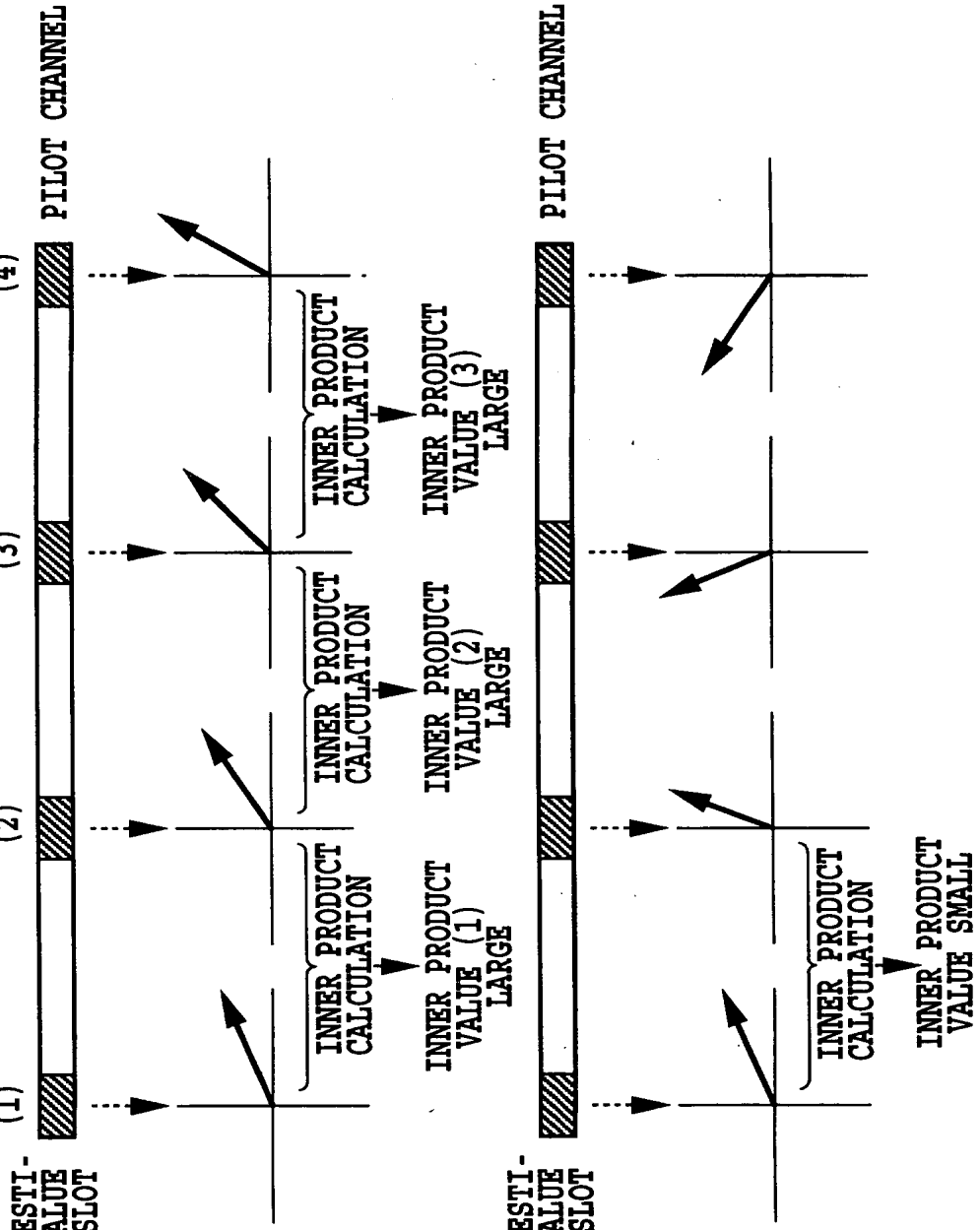


FIG.28A

FIG.28B

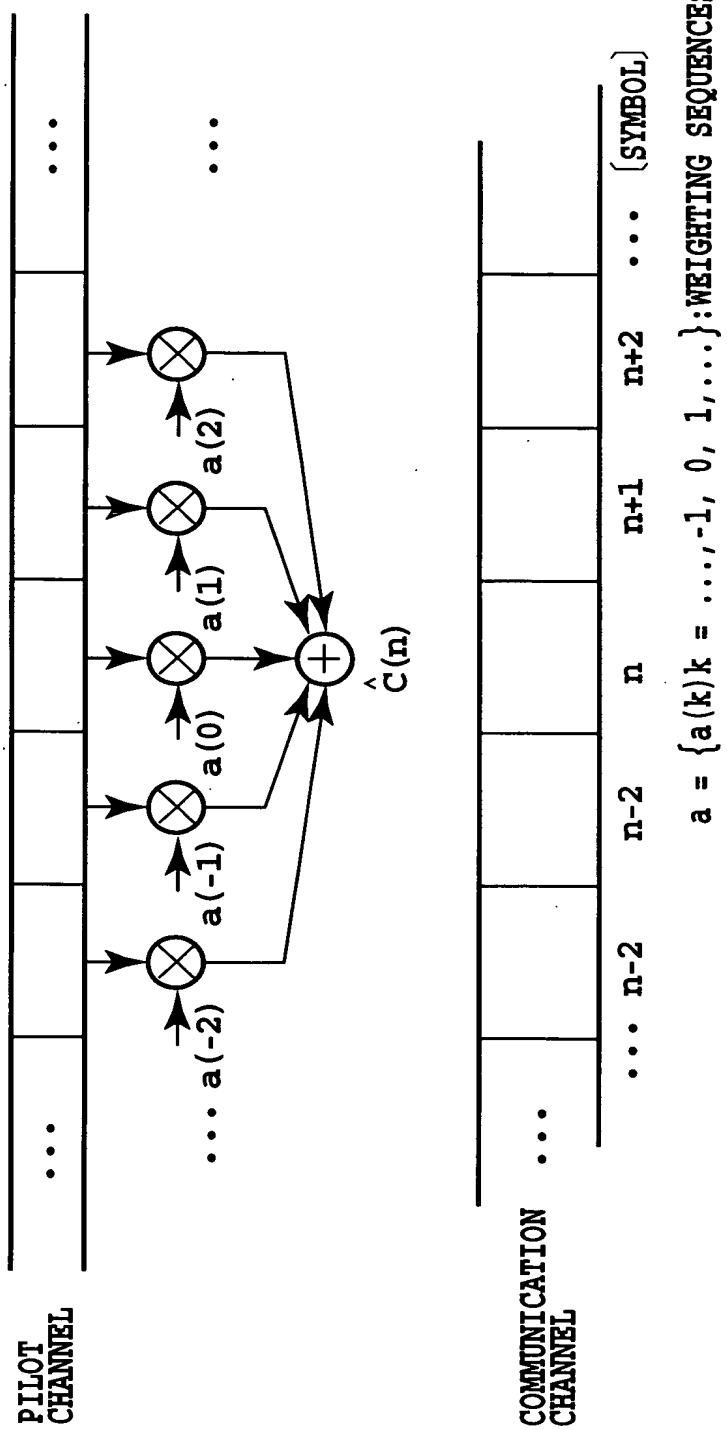

PILOT CHANNEL
COMMUNICATION CHANNEL
a(-2)
a(-1)
a(0)
a(1)
a(2)
Ĉ(n)
n-2
n
n+1
n+2
(SYMBOL)
a = {a(k)k = ...,-1, 0, 1,...}:WEIGHTING SEQUENCES
Ĉ(n):CHANNEL ESTIMATION VALUE FOR nTH SYMBOL

FIG.29

FIG.30

FIG.30A	FIG.30B

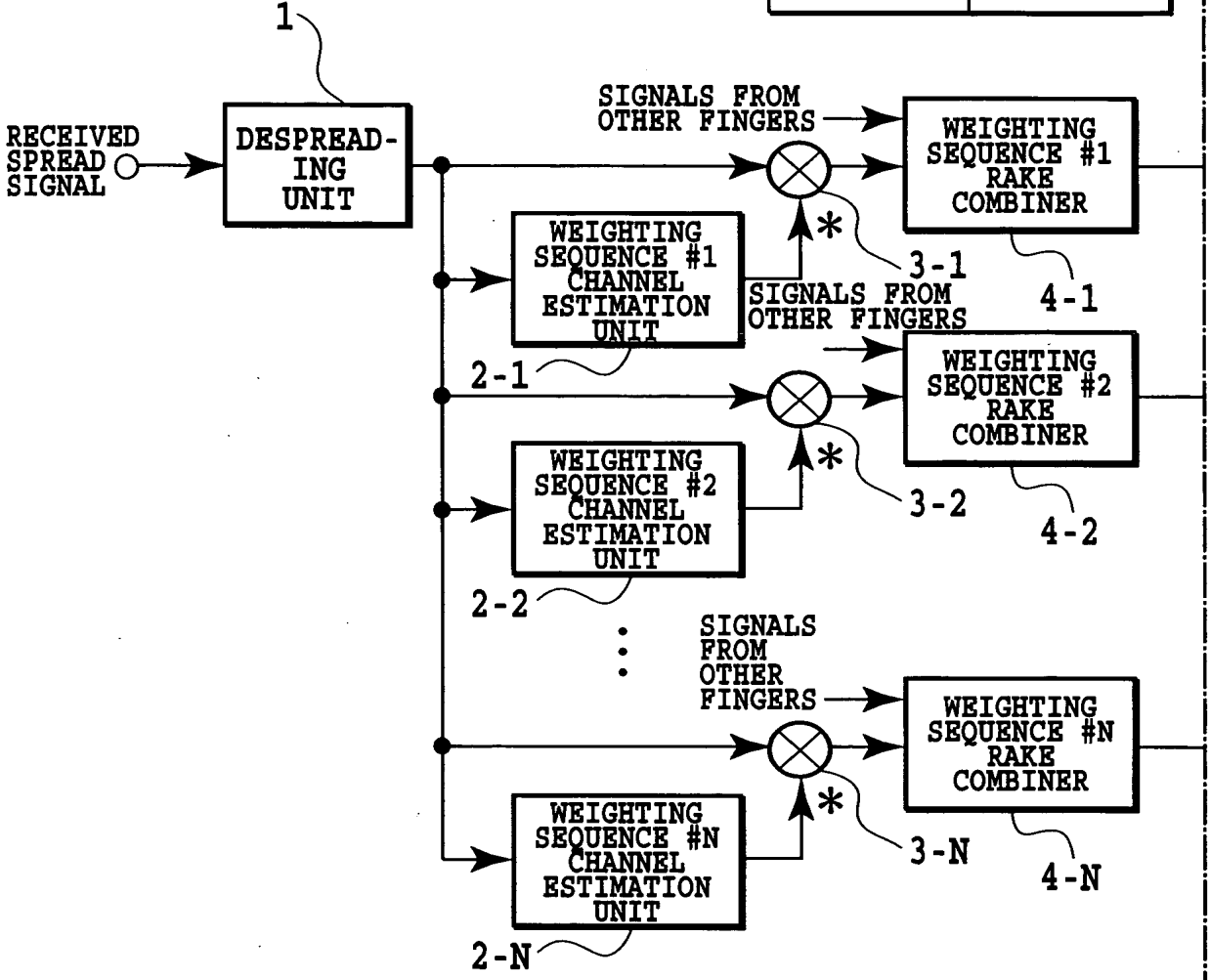


FIG.30A

09/701705 - 09/07/2001

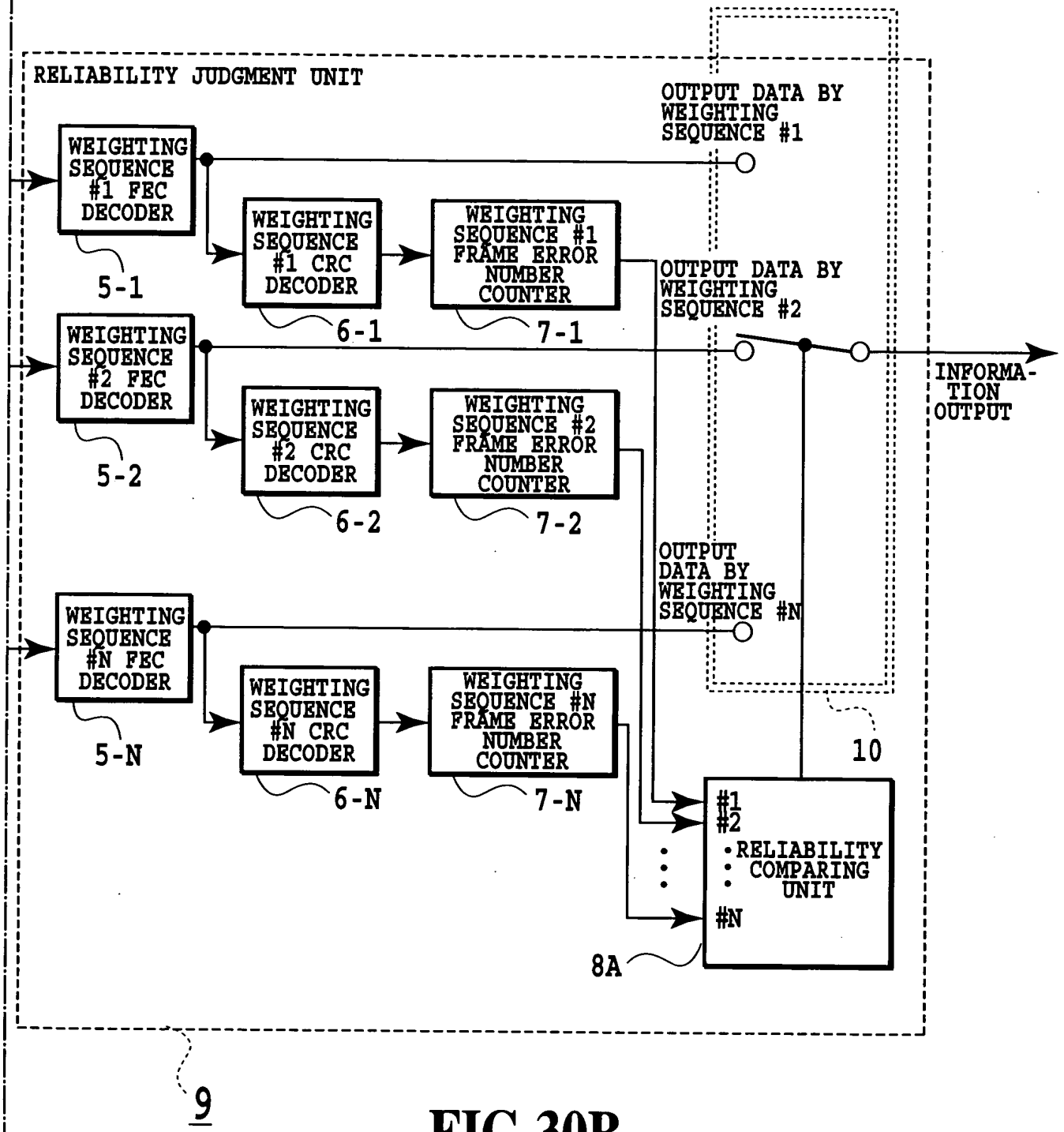

RELIABILITY JUDGMENT UNIT
WEIGHTING SEQUENCE #1 FEC DECODER
5-1
WEIGHTING SEQUENCE #1 CRC DECODER
6-1
WEIGHTING SEQUENCE #1 FRAME ERROR NUMBER COUNTER
7-1
OUTPUT DATA BY WEIGHTING SEQUENCE #1
WEIGHTING SEQUENCE #2 FEC DECODER
5-2
WEIGHTING SEQUENCE #2 CRC DECODER
6-2
WEIGHTING SEQUENCE #2 FRAME ERROR NUMBER COUNTER
7-2
OUTPUT DATA BY WEIGHTING SEQUENCE #2
INFORMATION OUTPUT
WEIGHTING SEQUENCE #N FEC DECODER
5-N
WEIGHTING SEQUENCE #N CRC DECODER
6-N
WEIGHTING SEQUENCE #N FRAME ERROR NUMBER COUNTER
7-N
OUTPUT DATA BY WEIGHTING SEQUENCE #N
10
#1
#2
RELIABILITY COMPARING UNIT
#N
8A
9

FIG.30B

FIG.31

FIG.31A FIG.31B

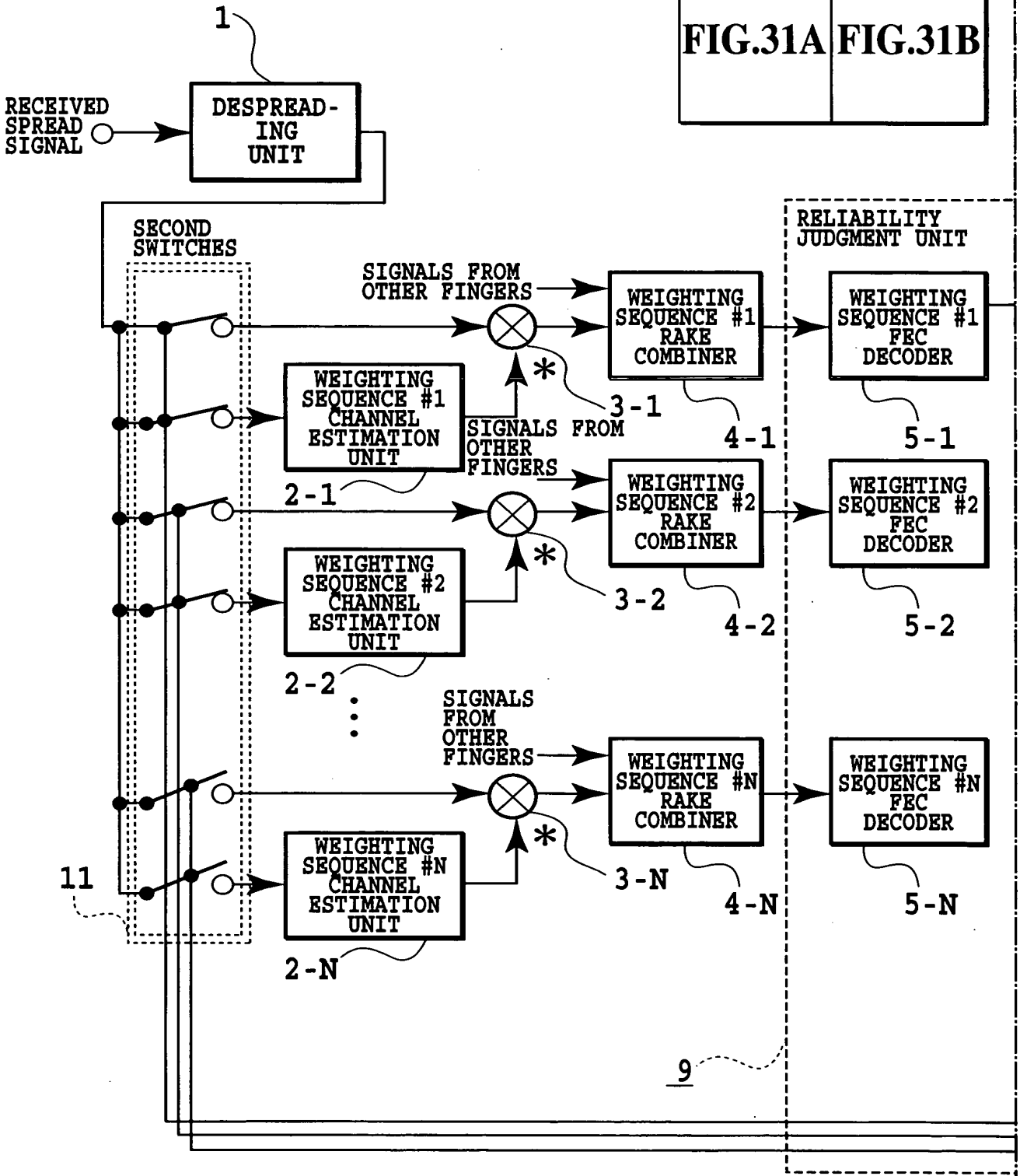


FIG.31A

09701705 050700

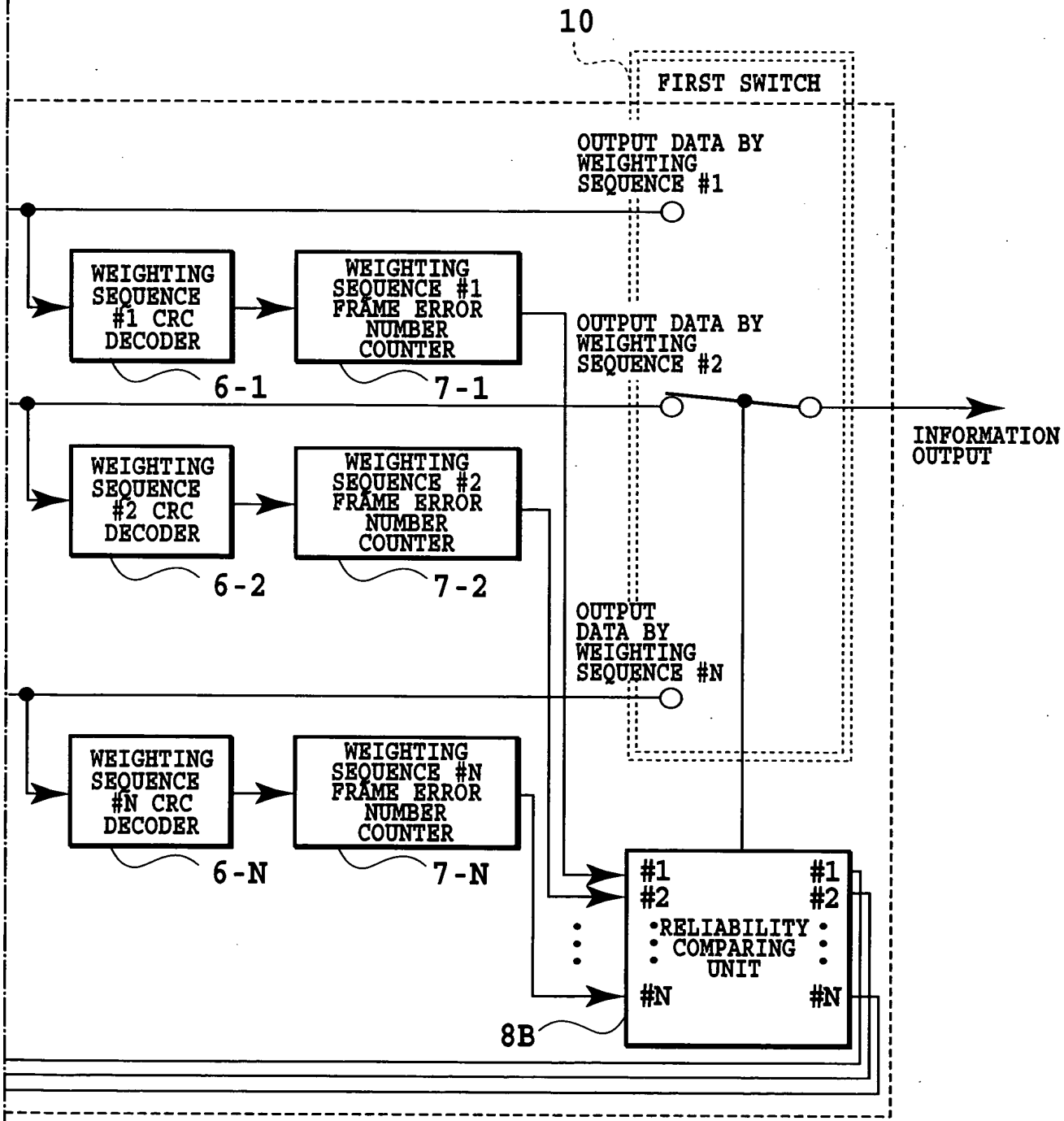

10
FIRST SWITCH
OUTPUT DATA BY WEIGHTING SEQUENCE #1
WEIGHTING SEQUENCE #1 CRC DECODER
WEIGHTING SEQUENCE #1 FRAME ERROR NUMBER COUNTER
6-1
7-1
OUTPUT DATA BY WEIGHTING SEQUENCE #2
INFORMATION OUTPUT
WEIGHTING SEQUENCE #2 CRC DECODER
WEIGHTING SEQUENCE #2 FRAME ERROR NUMBER COUNTER
6-2
7-2
OUTPUT DATA BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #N CRC DECODER
WEIGHTING SEQUENCE #N FRAME ERROR NUMBER COUNTER
6-N
7-N
#1
#2
#N
RELIABILITY COMPARING UNIT
8B

FIG.31B

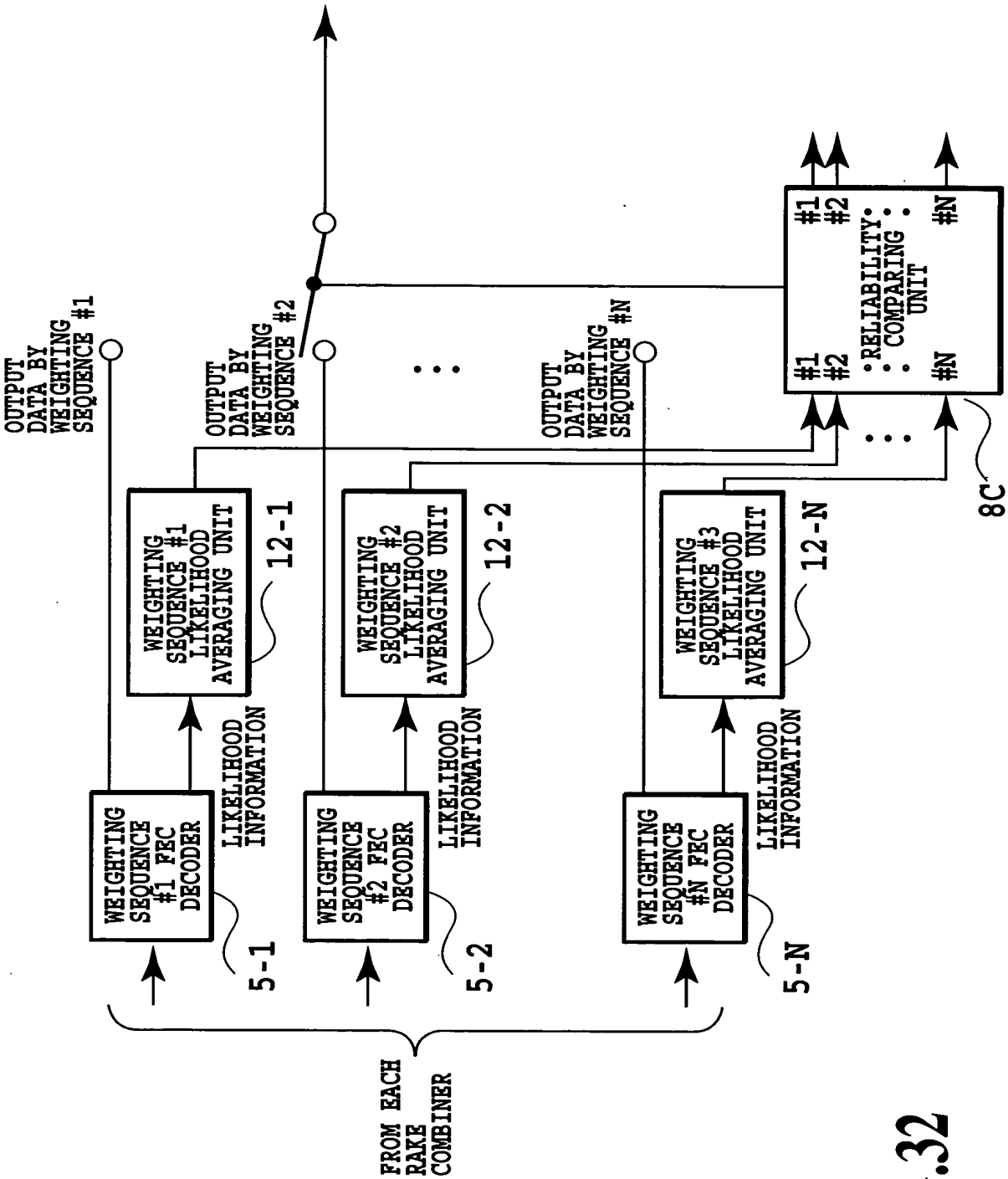

FROM EACH RAKE COMBINER
WEIGHTING SEQUENCE #1 FEC DECODER
WEIGHTING SEQUENCE #2 FEC DECODER
WEIGHTING SEQUENCE #N FEC DECODER
5-1
5-2
5-N
LIKELIHOOD INFORMATION
LIKELIHOOD INFORMATION
LIKELIHOOD INFORMATION
WEIGHTING SEQUENCE #1 LIKELIHOOD AVERAGING UNIT
WEIGHTING SEQUENCE #2 LIKELIHOOD AVERAGING UNIT
WEIGHTING SEQUENCE #3 LIKELIHOOD AVERAGING UNIT
12-1
12-2
12-N
OUTPUT DATA BY WEIGHTING SEQUENCE #1
OUTPUT DATA BY WEIGHTING SEQUENCE #2
OUTPUT DATA BY WEIGHTING SEQUENCE #N
RELIABILITY COMPARING UNIT
#1
#2
#N
8C

FIG.32

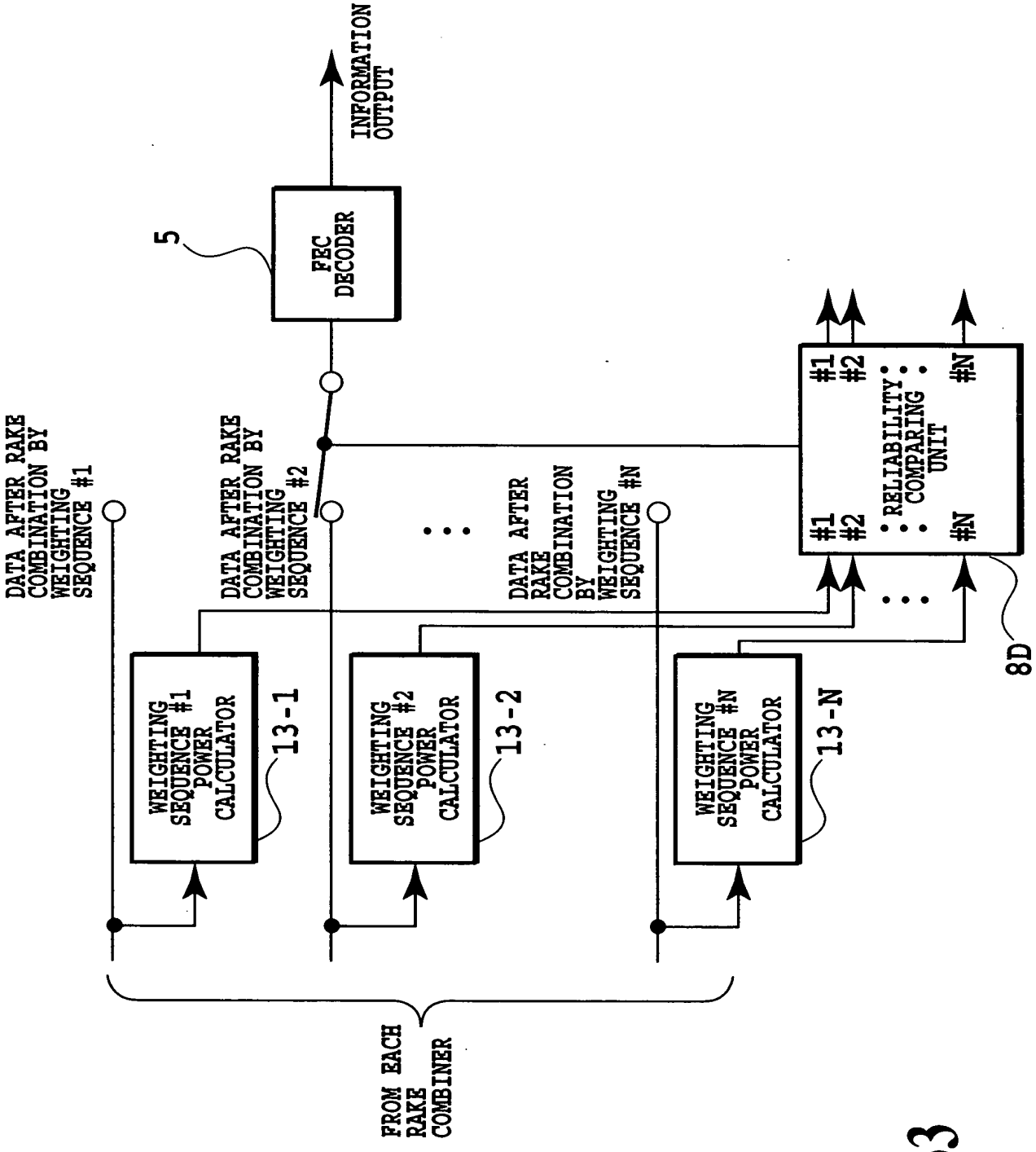

INFORMATION OUTPUT
5
FEC DECODER
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #1
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #2
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #1 POWER CALCULATOR
13-1
WEIGHTING SEQUENCE #2 POWER CALCULATOR
13-2
WEIGHTING SEQUENCE #N POWER CALCULATOR
13-N
RELIABILITY COMPARING UNIT
#1
#2
#N
8D
FROM EACH RAKE COMBINER

FIG.33

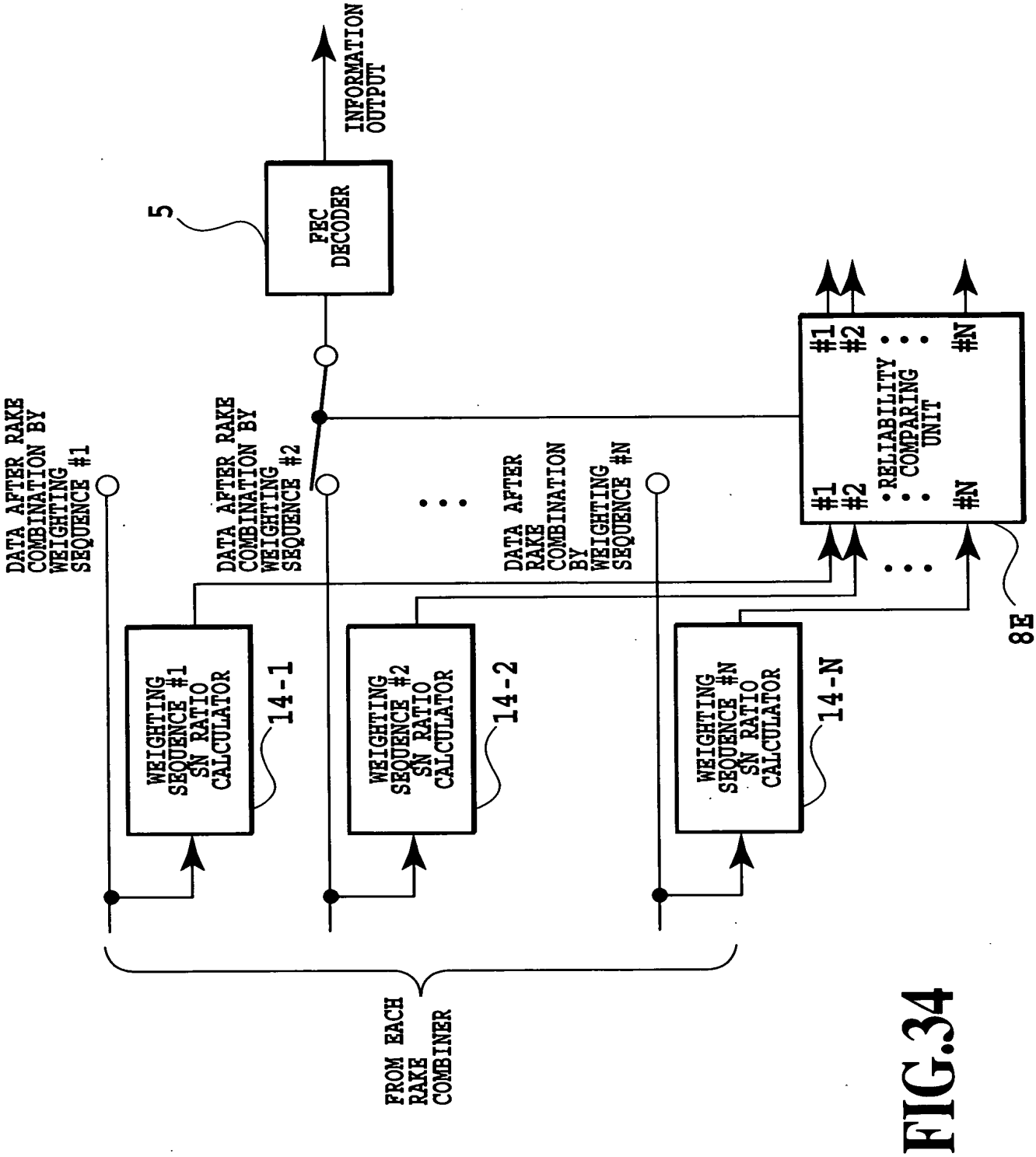

INFORMATION OUTPUT
FEC DECODER
5
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #1
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #2
DATA AFTER RAKE COMBINATION BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #1 SN RATIO CALCULATOR
14-1
WEIGHTING SEQUENCE #2 SN RATIO CALCULATOR
14-2
WEIGHTING SEQUENCE #N SN RATIO CALCULATOR
14-N
#1
#2
#N
RELIABILITY COMPARING UNIT
8E
FROM EACH RAKE COMBINER

FIG.34

FIG.35

FIG.35A FIG.35B

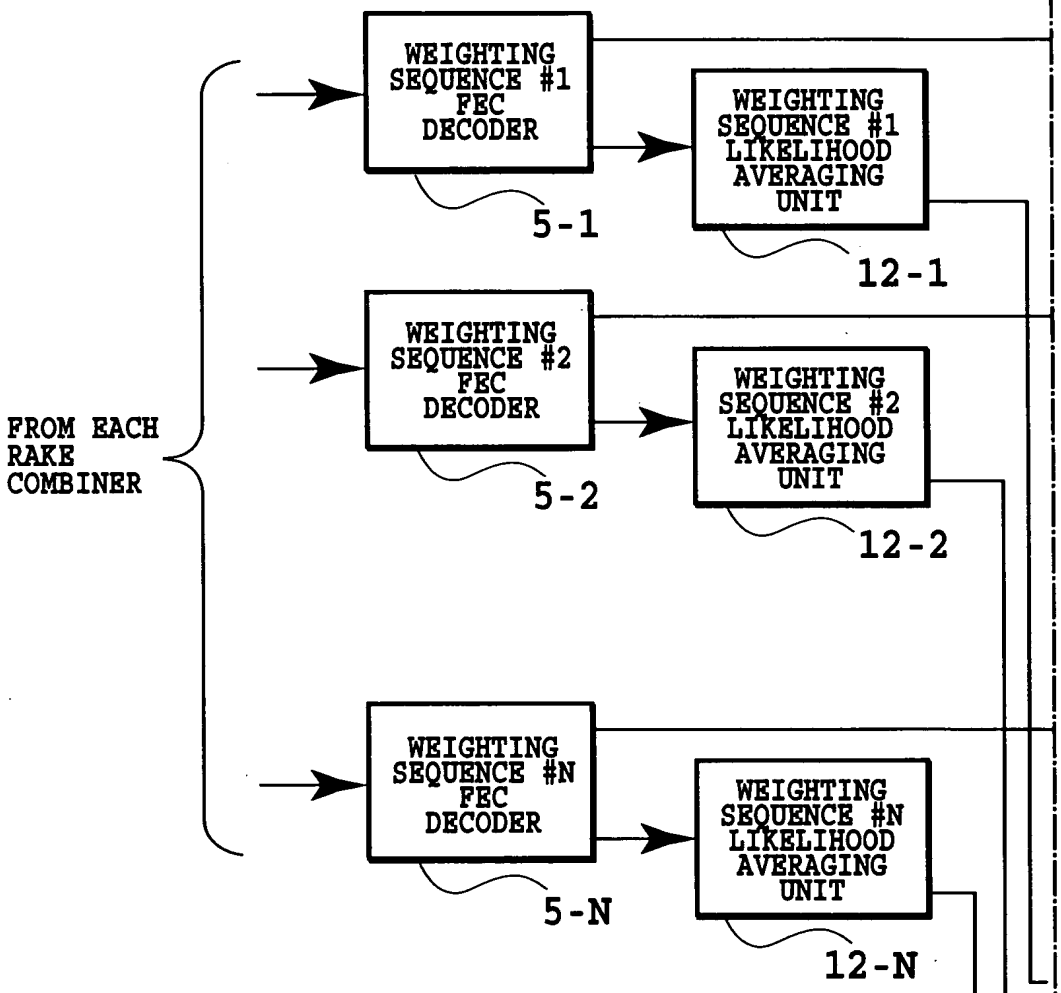


FIG.35A

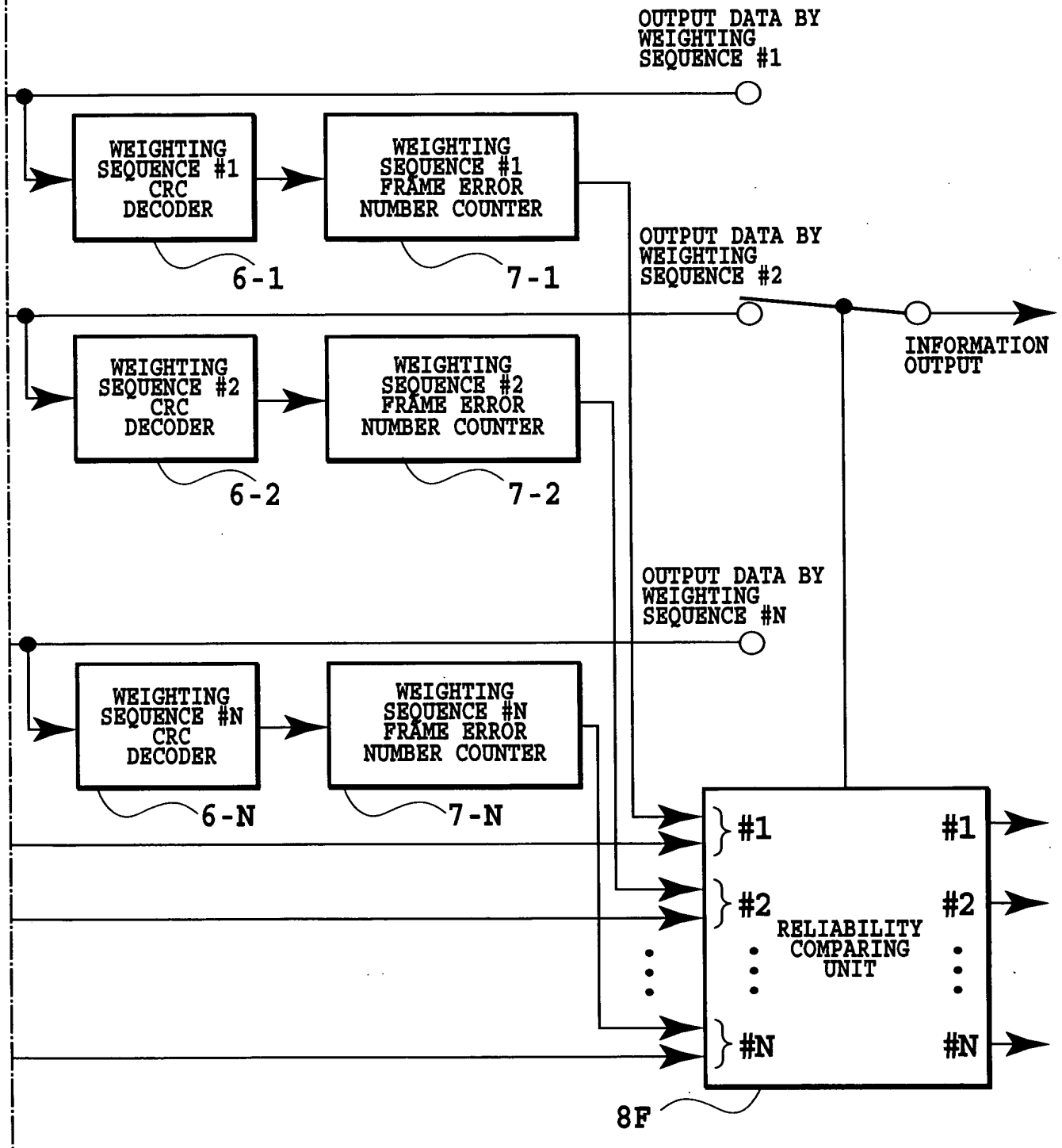

OUTPUT DATA BY WEIGHTING SEQUENCE #1
WEIGHTING SEQUENCE #1 CRC DECODER
WEIGHTING SEQUENCE #1 FRAME ERROR NUMBER COUNTER
6-1
7-1
OUTPUT DATA BY WEIGHTING SEQUENCE #2
INFORMATION OUTPUT
WEIGHTING SEQUENCE #2 CRC DECODER
WEIGHTING SEQUENCE #2 FRAME ERROR NUMBER COUNTER
6-2
7-2
OUTPUT DATA BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #N CRC DECODER
WEIGHTING SEQUENCE #N FRAME ERROR NUMBER COUNTER
6-N
7-N
#1
#2
#N
RELIABILITY COMPARING UNIT
#1
#2
#N
8F

FIG.35B

FIG.36

FIG.36A FIG.36B

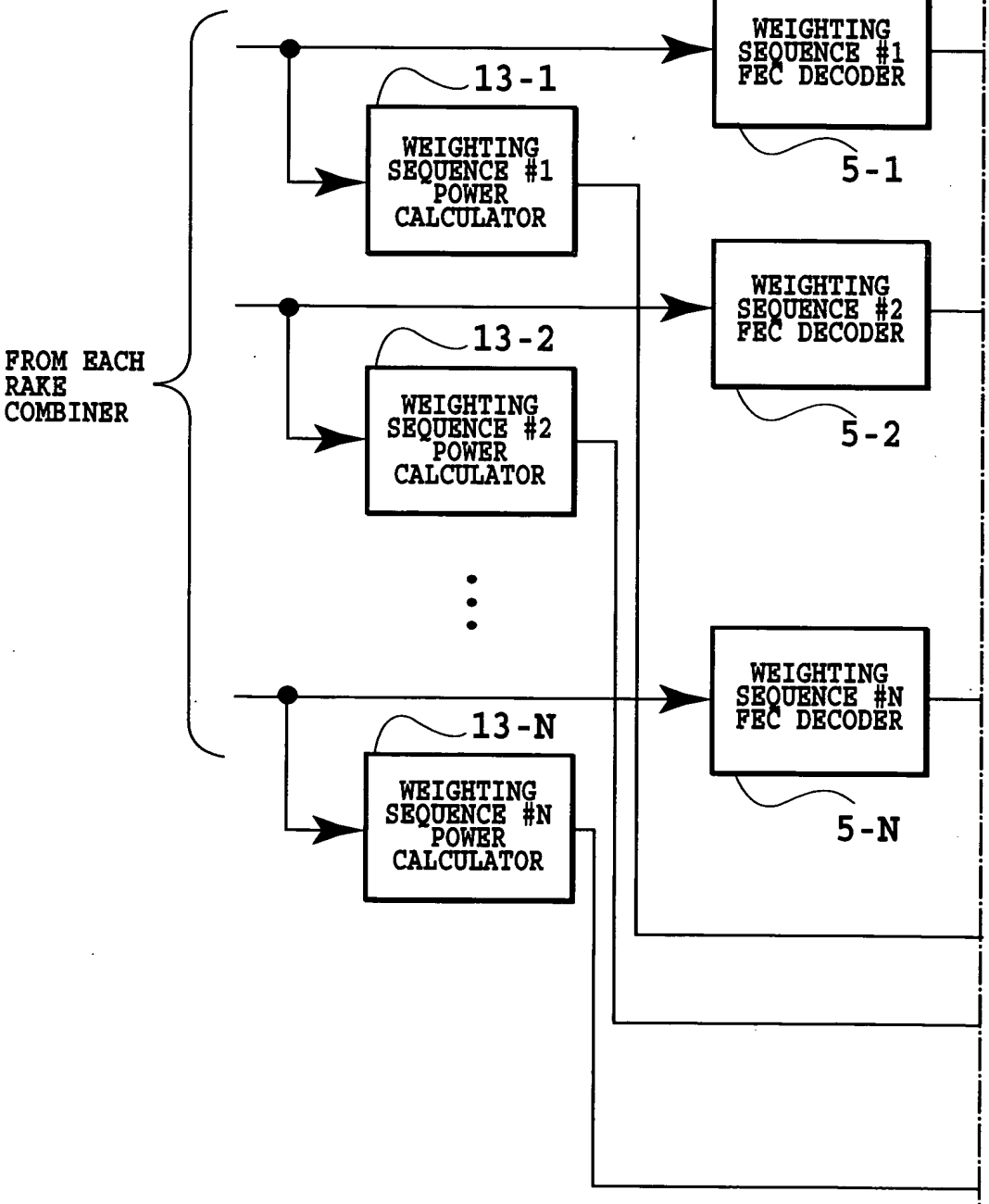


FIG.36A

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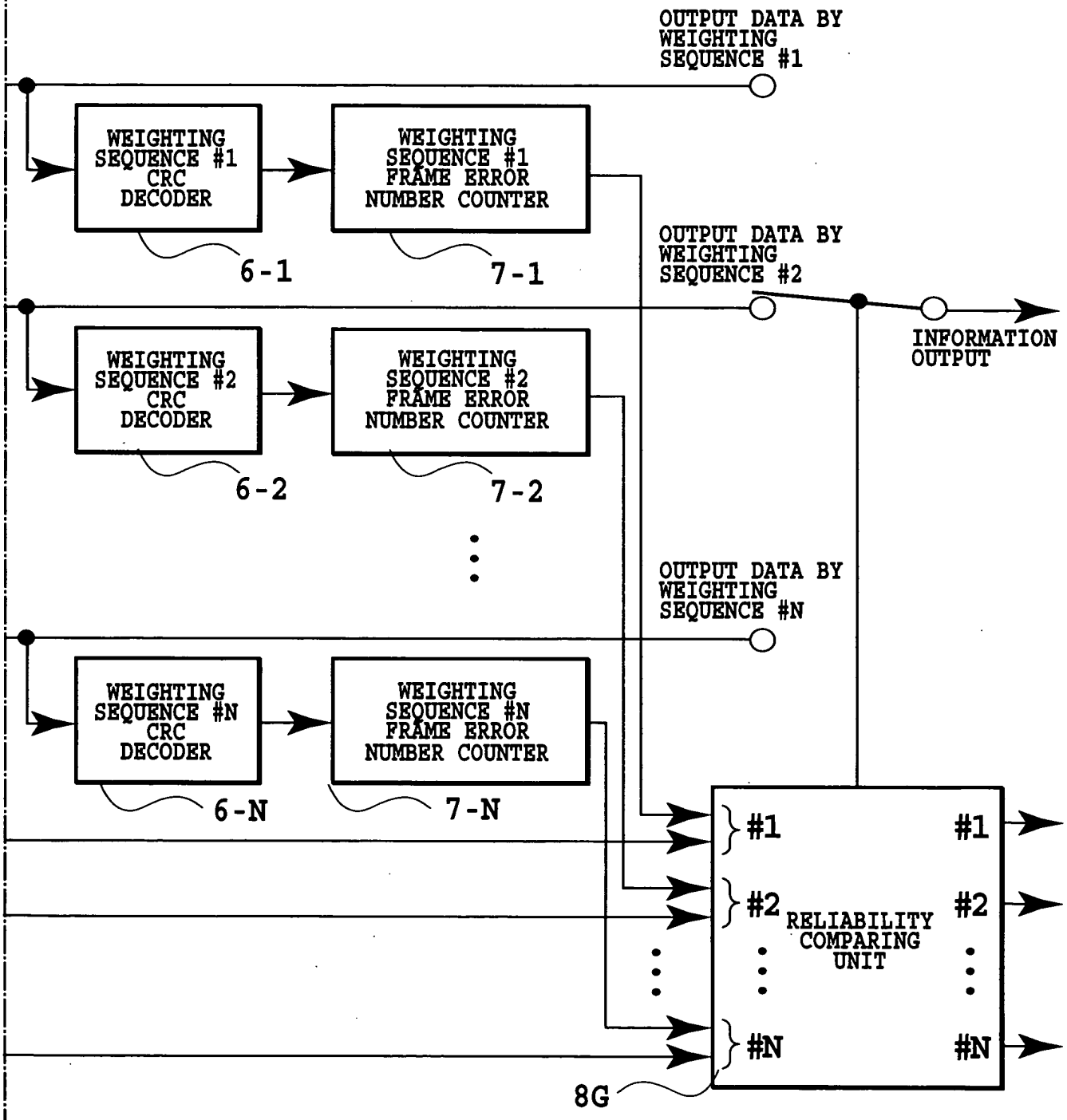
OUTPUT DATA BY WEIGHTING SEQUENCE #1
WEIGHTING SEQUENCE #1 CRC DECODER
WEIGHTING SEQUENCE #1 FRAME ERROR NUMBER COUNTER
6-1
7-1
OUTPUT DATA BY WEIGHTING SEQUENCE #2
INFORMATION OUTPUT
WEIGHTING SEQUENCE #2 CRC DECODER
WEIGHTING SEQUENCE #2 FRAME ERROR NUMBER COUNTER
6-2
7-2
OUTPUT DATA BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #N CRC DECODER
WEIGHTING SEQUENCE #N FRAME ERROR NUMBER COUNTER
6-N
7-N
#1
#2
#N
RELIABILITY COMPARING UNIT
#1
#2
#N
8G

FIG.36B

FIG.37

FIG.37A FIG.37B

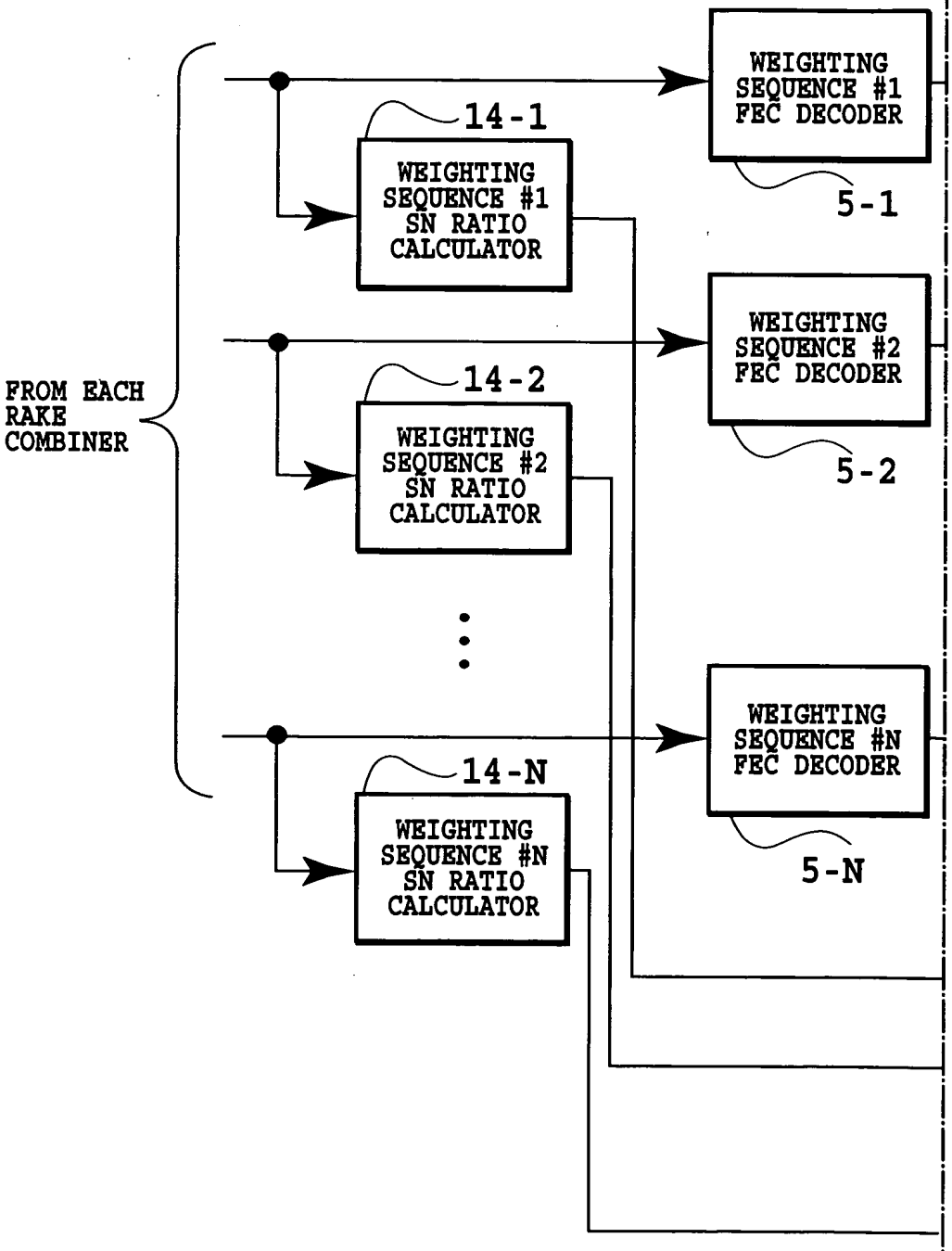

FIG.37A

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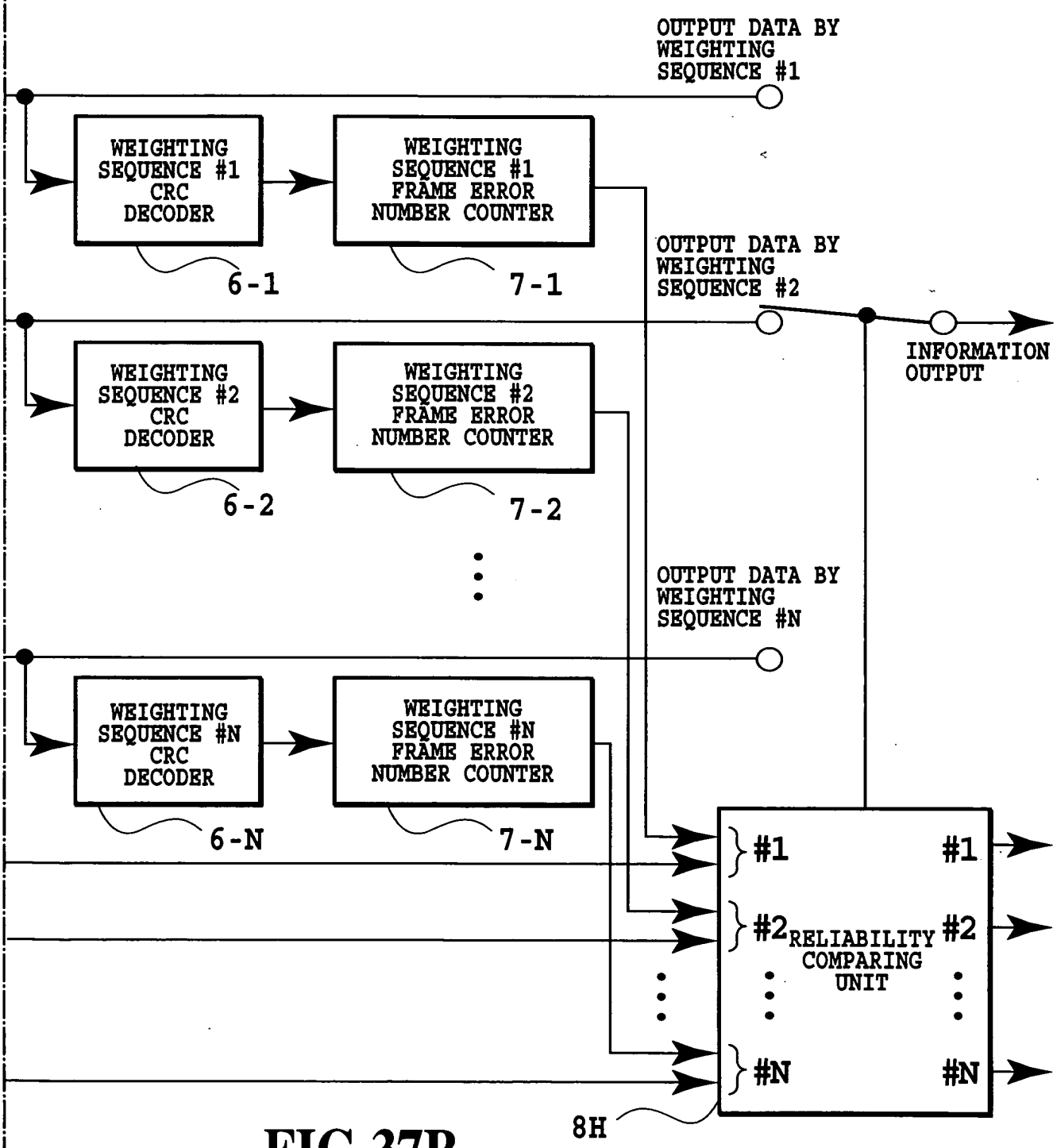
OUTPUT DATA BY WEIGHTING SEQUENCE #1
WEIGHTING SEQUENCE #1 CRC DECODER
WEIGHTING SEQUENCE #1 FRAME ERROR NUMBER COUNTER
6-1
7-1
OUTPUT DATA BY WEIGHTING SEQUENCE #2
INFORMATION OUTPUT
WEIGHTING SEQUENCE #2 CRC DECODER
WEIGHTING SEQUENCE #2 FRAME ERROR NUMBER COUNTER
6-2
7-2
OUTPUT DATA BY WEIGHTING SEQUENCE #N
WEIGHTING SEQUENCE #N CRC DECODER
WEIGHTING SEQUENCE #N FRAME ERROR NUMBER COUNTER
6-N
7-N
#1
#2
#N
RELIABILITY COMPARING UNIT
#1
#2
#N
8H

FIG.37B

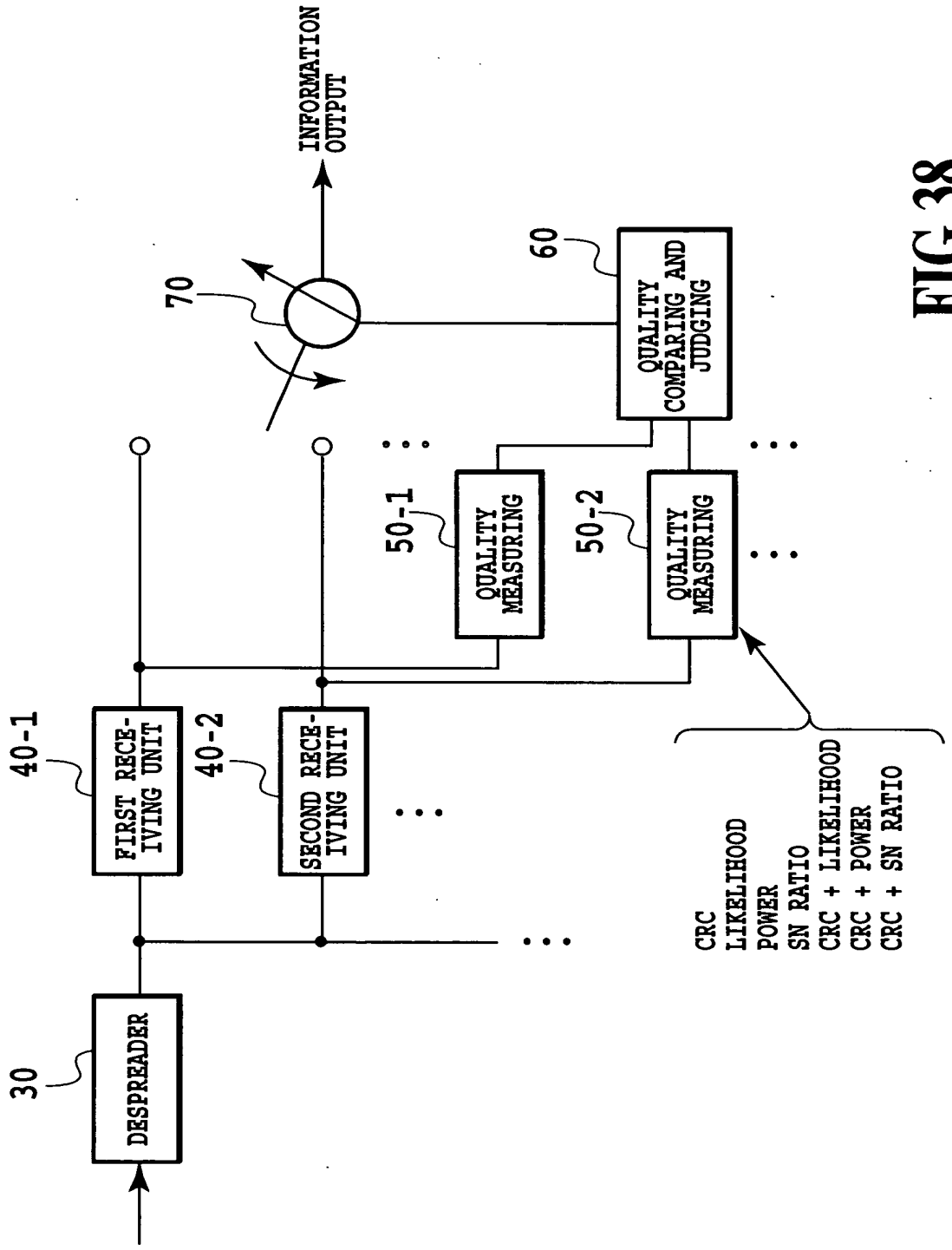

FIG.38

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